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[ORIGINAL COMMUNICATION.]

Boroglyceride, and its Sodium and Calcium Compounds.*

BY WILLIAM S. FLINT, PH.G.

THIS preparation was discovered by Professor Barff, of London, England, while experimenting with different substances to obtain a compound for the preservation of meat.

He explains the process of manufacturing the boroglyceride in a paper published in the *Chemist and Druggist* for April, 1882.

Heat 92 grammes of glycerin with 62 grammes of boracic acid (154 grammes in all), an action takes place and steam is given off. At a tolerably high temperature, add the boracic acid in small quantities with frequent stirring. At first the acid dissolves rapidly; toward the end of the operation more slowly. If the mixture be allowed to cool directly after the boracic acid is all dissolved, a crystalline precipitate separates out, in which case, probably, chemical combination with the glyceryl has not taken place. The weight will be found to be 131 grammes, and the substance has a sweet taste.

Heat a second time; a crystalline precipitate separates out on cooling, and steam is freely given off. When cold the product will weigh 116 grammes. As the combination becomes more perfect, the solubility in water is increased. Heat a third time; no crystalline precipitate separates out, but the mass when cold sets like ice, is brittle, chips readily, and the pieces are hard and dry. The boroglyceride thus formed communicates no flavor whatever to the substances to which it is added, or which are immersed in the preservative solution. In proportion as the glycerin is decomposed and chemically united with the boracic acid, the sweet principle disappears, being a total loss of 54 grammes, corresponding to three molecules of water.

He explains the chemical combination by the following equation:

$C_3H_8O_3$ glycerin + H_3BO_3 boracic acid + heat = $C_3H_5BO_3$ boroglyceride, + $3H_2O$ water.

I heated 50 grammes of glycerin to a temperature of about 300° F., and added 50 grammes of crystallized boracic acid in portions till dissolved, and allowed it to cool. An opaque mass was thus obtained, without crystalline appearance. Heating to the same temperature for some time, and allowing it to cool, a transparent solid product was obtained, resembling boroglyceride. Again heating, and allowing it to cool, the product was brittle and resembled glass. Allowing it to stand for a few days it became opaque. There was very little effervescence during the process.

Using 92 grammes of glycerin and 62 grammes of powdered boracic acid, and heating to 300° F., adding the acid in portions, the effervescence was not very marked, and when dissolved it weighed 125 grammes, and was a thick liquid with an opaque appearance.

Again heating to the same temperature, continuing the heat for some time and allowing it to cool, crystals were seen, and the weight was 110 grammes. Heating for the third time, a very hard and brittle substance was obtained, but it still remained opaque.

Heating 92 grammes of glycerin to a temperature of 300° F., and adding 62 grammes of crystallized acid in portions, the effervescence was very decided, steam and irritating vapors were given off. Continuing the heat, with frequent stirring, until the weight was reduced to about 100 grammes, the product was solid, brittle, transparent, of a decided amber color, and did not become opaque upon long standing.

The following operation gave the best result, a very light-colored product being obtained:

I heated 184 grammes of Bower's glycerin in a porcelain capsule to a temperature of 240° F., and added 124 grammes of Morson's crystallized boracic acid, in portions, with constant stirring. There was no effervescence, and when dissolved, a transparent, thick liquid was obtained, the weight of which was 270 grammes. Continuing the heat at the same temperature, with frequent stirring, steam was given off, and it became more fluid. As the combination became more perfect a film was formed upon the surface; it became thicker, and when reduced to 200 grammes it was poured upon a sheet of tin, well oiled with vaselin, and allowed to cool. The whole operation required about four hours. When nearly cold, it was divided into squares with a large spatula, and when thoroughly cooled it was broken in pieces and quickly transferred to well-stoppered vials. It readily absorbs water from the atmosphere, becoming sticky and greasy. A porcelain or porcelain-lined dish should be used in its preparation, as it is least affected by boracic acid at high temperatures.

This product was found to be readily soluble in hot water, less freely so in cold water. A white coating is formed upon the pieces during solution in the latter, requiring agitation to hasten the solution. It is soluble in hot alcohol, and to a moderate degree in cold alcohol. It is insoluble in ether, but softens when allowed to stand in chloroform for some time. Heated upon a water-bath, it becomes fluid at a temperature of about 212° F., and mixes with glycerin in all proportions, forming a transparent mixture.

Glycerin, when heated, readily dissolves boracic acid, but it has an objectionable sweet taste. The solubility at different temperatures is shown by the following:

	DISSOLVE AT	PARTS OF BORACIC ACID.
100 parts of glycerin	50° F.	20
	120° F.	30
	130° F.	43
	170° F.	58
	212° F.	72

Equal weights of glycerin and borate of sodium or borate of calcium, heated to 204° F., combine with effervescence without the evolution of irritating vapors, and require constant stirring to prevent burning upon the bottom of the capsule. They form compounds resembling boroglyceride, but absorb water more readily, and do not retain their shape when broken in pieces.

One part of borate of sodium dissolved in four parts of glycerin forms the glycerite of borax of the Pharmacopœia of 1870. Borax when exposed to a high temperature, gives off its water of crystallization, and is converted into a white spongy mass which, at a red heat, melts and on cooling forms a transparent glass.

Boroglyceride has been used with success as an antiseptic in the hospitals of London [and elsewhere]. It is not only a reliable antiseptic, but promotes the rapid healing of wounds. Being inodorous, tasteless, and innocuous, it is more agreeable and safer to use than carbolic acid, iodoform, thymol, naphthalin, resorcin, and various other preparations which have been recommended for that purpose.

As a preservative agent it should be used in the form of a solution containing from 2% to 5% of the salt.

As an antiseptic it may be employed in the form of an ointment, or by medicating absorbent cotton with an alcoholic solution and drying, or in an aqueous solution. The five-per-cent solution in water is not affected by tannin, tincture of chloride of iron, Monsel's solution, dilute acids, or the ordinary astringent tinctures, thus rendering it valuable for use in gargles and throat sprays.

It may be made into an ointment with petrolatum or simple ointment, by melting with a small amount of glycerin, adding the base previously melted, with constant stirring till cold. It mixes readily with ointment of rose-water, without the addition of glycerin, by simply melting the boroglyceride, adding the ointment, and stirring until cold. The following formula makes a very nice ointment of a beautiful golden color, containing 25% of boroglyceride, or the equivalent of a drachm of boracic acid to an ounce of the ointment:

Boroglyceride	30 parts
Glycerin	20 "
White wax	10 "
Petrolatum (or vaseline)	60 "

Melt the boroglyceride with the glycerin and add the wax previously melted with the petrolatum; stir until cold.

* Abstract of a thesis presented to the Massachusetts College of Pharmacy, Session of 1882-83.

Synthesis of Nicotine.

JULIUS MENSEL states *in the Pharmaceutische Zeitung*, Sept. 26th, 1883, that he has formed nicotine artificially in the following way.

Benzoic acid is dissolved in acetone, and the whole mixed with concentrated sulphuric acid. A precipitate is thereby formed, which on heating redissolves in the excess of acetone. When cool, a solution of ammonia gas in absolute alcohol is added, whereupon ammonium sulphate precipitates out, and nicotine is found with other products of decomposition and undecomposed acetone in the supernatant liquid.—*Chem. and Drugg.*

Benzoate of Cinchonidine.

BENZOATE of cinchonidine is recommended by M. Bouchardat in mild cases of diabetes with excessive production of uric acid. It is made, according to M. Byasson, by dissolving freshly-precipitated cinchonidine, prepared from 200 parts of the sulphate, in a solution of 60 parts of benzoic acid dissolved in 200 parts of alcohol of 90 per cent, poured into a porcelain vessel containing 3,000 parts of boiling distilled water. The solution of the salt, before being allowed to cool, should, if necessary, be rendered slightly alkaline by the careful addition of ammonia.

The salt crystallizes on cooling.—*Pharm. Journ.*

Purity of the Sulphate of Cinchonidine in Use and the Pharmacopœia Test.*

SAMPLES of sulpate of cinchonidine put on the market by six manufacturers were obtained, five of the manufacturers being in the United States, and one in Germany. It could not be ascertained that any other American manufacturers produce the article. The samples were taken, or were credibly assured to have been taken from the manufacturer's cans, with the exception of one sample that had been canned by a wholesale dealer who gave a statement of the manufacturer's name. In all, twelve samples were obtained and tested—four samples of one manufacturer, three samples of another, two of another, and one sample from each of three manufacturers whose brands of this article are not extensively used.

The test for cinchonine and quinidine sulphates, as directed in the United States Pharmacopœia of 1880,† was applied to each sample, with exact and uniform control of the conditions.

The test limit only requires that not more than a slight turbidity should appear on adding, or immediately, or very soon after adding the ammonia. In applying the test, after adding the ammonia, the liquids were set aside and examined from time to time, noting the temperature, until after fifteen to eighteen hours' standing, for the occurrenc of turbidity.

All but one of the twelve samples were approved by the test, according to the pharmacopœial standard. In fact, all but one were found to show a satisfactory margin of purity beyond the bare limit of the pharmacopœia, no one of the eleven giving any turbidity immediately, or very soon after adding the ammonia. In the case of eight of the samples, a slight turbidity appeared only after standing for fifteen to eighteen hours at 70° to 80°F. With two of the samples a slight turbidity appeared only after standing six hours, at about the same temperature as the others. With one sample the slight turbidity appeared after standing some time, the number of hours not noted. The one sample, which did not come up to the standard, gave a result in very strong contrast with the results of all the other, the addition of the ammonia causing at once more than a turbidity, an abundant precipitate. This sample was the one which was canned by a wholesale dealer, not a manufacturer. In investigation as to the delicacy of the pharmacopœial test, some work was done, to gain further evidence as to the interpretation of the test limit, namely: "absence of more than 0.5 per cent of sulphate of cinchonine, or of more than 1.5 per cent of sulphate of quinidine." This value of the limit has been partly supported by the experiments of Mr. Teeter,‡ and some other statements, but additional evidence was deemed desirable. Pure sulphates of cinchonidine, cinchonine, and quinidine were prepared, as done by Mr. Teeter, and previously by Mr. Thum.§ Mixtures of the pure cinchonidine salt, successively with one per cent, one-half per cent, and one-fourth per cent of the pure cinchonine salt, and again of the pure quinidine salt were subjected to the test of the pharmacopœia, as before described and were found to give results as follows (the temperatures being those of the atmosphere at conclusion of the test).

Cinchonidine sulphate with admixture of cinchonine sulphate:

1%, a precipitate on standing 10 minutes, 70° F.

½%, turbidity on standing 15–16 hours, 70° F.

¼%, no turbidity on standing 24 hours, 72° F.

With admixture of quinidine sulphate:

1%, decided turbidity at once, 70° F.

½%, slight turbidity after 2–4 hours, 76° F.

¼%, no turbidity on standing 24 hours, 80° F.

The results agree quite well with those of Mr. Teeter, and from both his investigation and this briefer one it would appear, contrary to ordinary expectation, that this test reveals quinidine in very nearly as small quantities as it does cinchonine, and that the interpretation of the pharmacopœial test limit might be so modified as to read, absence of more than one per cent of either sulphate of cinchonine or sulphate of quinidine. It follows of course from market values that there is greater liability of considerable proportions of cinchonine than of quinidine salt, but imperfect separations in manufacture may leave either impurity in quantities somewhat larger than fair pharmaceutical purity should admit.

Salicylate of Bismuth.

IN addition to what we have heretofore printed on this subject, some recent statements of Mr. Ragoucy, of Paris, on the constitution of the salicylates of bismuth will be of interest.

Before quoting these, however, we would say that a process for preparing the salt given by us on p. 280 of our last volume, as well as another by Dr. Wade, on p. 313 (*ibid.*), has been criticised by Dr. Wolff, of Philadelphia, because the products of both processes are contaminated with subnitrate. We have in stock several samples made at different times by the first-named process, and have found one of them (the first one made) to be *almost* free from nitrate. The minute quantity present could not interfere with its therapeutic value. Another sample, however, contains a good deal more, and besides, a small quantity of free salicylic acid, which was not completely removed by washing. It would seem, therefore, that the proportion of subnitrate present is likely to vary in different lots made at different times.

Ragoucy has arrived at the same conclusion, as will be seen further on. Dr. Wolff (*Am. Journ. Ph.*, 1883, 554), proposes two processes, which he states yield unexceptionable products.

1. Having ascertained that a glycerin solution of crystallized nitrate of bismuth bore dilution with 1 or 2 parts of water, before precipitating any basic nitrate, he decomposed a glycerin solution of the acid nitrate by a concentrated solution of salicylate of sodium. This produced basic salicylate of bismuth, nitrate of sodium, free nitric acid, free salicylic acid, and water. The precipitate was washed first with cold, then with hot water, and lastly with alcohol. Its composition is, probably, $BiO.C_7H_5O_3$.

2. Since basic salicylate of bismuth, when treated with a concentrated solution of bicarbonate of sodium, yields basic carbonate of bismuth and salicylate of sodium, Dr. Wolff inferred that basic nitrate of bismuth would also yield, on boiling with a concentrated solution of salicylate of sodium, a basic salicylate of bismuth. This was found to be the case. The precipitate, being well washed with hot water, had the same appearance as that obtained by the other process.

3. The salt may also be produced by boiling together freshly precipitated oxide of bismuth and salicylic acid. But the product is usually contaminated with undecomposed oxide.

Ragoucy denies the correctness of Jaillet's formulæ of the salt (NEW REM., 1883, 371), in which it appears that the hydrogen of salicylic acid is not replaced by a metal, while, on the other hand, oxygen is eliminated. On theoretical grounds he assumes that the normal salicylate of bismuth is so constituted that not only the atom of hydrogen giving it the character of an acid is replaced by a metal, but also the hydrogen of the carboxyl-radical:

Salicylic acid, $C_7H_6O_3$, or $HC_7H_5O_3$ may be considered as benzol (C_6H_6) in which one H is replaced by carboxyl (COOH), and the other by hydroxyl (OH):

$$C_6H_4.COOH.OH$$

A normal salicylate is formed when the hydrogen of the OH is replaced by a base. When the other hydrogen is also replaced, a body results which is known to exist, for instance, as an intermediate product in the preparation of salicylic acid: $Na_2C_7H_4O_3$. Normal salicylate of bismuth, according to Ragoucy's views, is of this class, and would have the composition $Bi_2(C_7H_4O_3)_3$, and he thinks that there is a basic salicylate, corresponding to the subnitrate $BiO.C_7H_5O_2$.

[There can hardly be a doubt that the last-named compound exists and has the composition here quoted. As to the composition given for the normal salicylate, it would be unsafe to accept it until proven by analysis which, indeed, is even necessary for the basic salt.]

The same author also speaks of the preparation of the salt and the frequent presence in it of free salicylic acid.

It is known from the researches of Ditte that the dissociation of the acid nitrate of bismuth [on dilution with water] continues, at one and the same temperature, until the solution contains a definite quantity of free acid, while subnitrate of bismuth is thrown down; that this dissociation proceeds still further when the temperature is raised, and that the subnitrate itself is dissociated, in presence of water, until it has attained the composition $2BiO.NO_3$. Until this has been obtained, the precipitate is a mixture of different subnitrates.

If to a nitric acid solution of subnitrate of bismuth, a solution of salicylate of sodium is added, there is formed nitrate of sodium, salicylic acid is precipitated, and there not being now enough nitric acid in solution to keep the rest of the nitrate in solution, there is a tendency of formation of subnitrate, which again liberates a fresh quantity of nitric acid. These disadvantages may be greatly diminished by using a concentrated solution of salicylate of sodium.

Yet, when the precipitate is washed, the phenomenon of dissociation reappears: salicylic acid being but little soluble, it is necessary to wash a long time, and in proportion to the quantity of wash-water, and according to its temperature, the product will be different.

These conditions, unfavorable to the preparation of a definite compound, together with the multiplicity of possible combinations between bismuth and salicylic acid, sufficiently explain the different results obtained by therapeutists in the use of this compound.

The preparation of salicylate of bismuth is a delicate operation: the washing of the precipitate, which is necessary to remove the nitrate of sodium and the undecomposed salicylate of sodium, raise the proportion of bismuth in the product, which contains some free salicylic acid, owing to the feeble solubility of the latter.

The best product thus far known in France, according to the author, is that made at the French Salicylic Acid Works; this contains comparatively little free salicylic acid. — *Rép. de Pharm.*, 1883, 498.

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* By LOUIS W. SCHMIDT, Ph.C., Contributions from the Chem. Laboratory of the University of Michigan (Ed. by Prescott and Vaughan), I., 100.

† See page 81 of the U. S. Pharmacopœia.

‡ University of Michigan, School of Pharmacy, C. W. Teeter, 1880; NEW REM., ix., p. 58, reprinted.

§ Proceedings American Pharmaceutical Association, page 28.

On Testing for Arsenic, Particularly in Subnitrate of Bismuth.

[Concluded from page 33.]

FINALLY it remained to study the

Behavior of Nitrate of Bismuth towards Arsenious and Arsenic Acids.

Very little is known concerning the relation of oxide of bismuth to arsenic or arsenious acids. Salkowski* states that arsenate of bismuth—$(BiAsO_4)_2.H_2O$ is insoluble in nitric acid, and suitable for the determination of arsenic. Schneider† finds that arsenic present in bismuth is converted into arsenious acid by nitric acid with gentle heat; but that on introducing the metal into nitric acid heated to 70°–90° C., arsenic acid is produced which immediately combines with oxide of bismuth to an insoluble compound which is completely insoluble in a solution of nitrate of bismuth as free from an undue excess of acid as possible. Upon this fact is based one step in the usual process of preparation of subnitrate of bismuth, namely, the removal of any insoluble precipitate which may separate when bismuth is dissolved in nitric acid and the solution heated to 80°–90° C.

On the behavior of arsenious acid toward oxide of bismuth the authorities are silent. Prof. Reichardt found that when the acid was purposely added to pure subnitrate, the larger portion at least remained in solution, though occasionally the precipitated salt was also found contaminated with arsenic. Whether the latter was present as arsenic acid was not decided, though probable.

On decomposing 10 *gm.* of acid nitrate of bismuth in the usual manner with water, in one case when 10 *gm.* of solution of arsenite of potassium had been added, no trace of arsenic was found in the subnitrate. In another case, when an equal quantity of arsenate of ammonium had been added, the whole of the arsenic was found in the precipitate.

In some other experiments with arsenious acid, the precipitate contained arsenic, but it was impossible to ascertain the nature and composition of the compound which it formed with bismuth. An arsenate of bismuth, however, which was prepared several times, contained 33.2 and 33.4 per cent of arsenic, respectively, which corresponds to the anhydrous salt $BiAsO_4$, requiring 33.14 per cent.

This arsenate of bismuth is completely decomposed by heating with excess of soda solution for about an hour at 50°–60° C. Equally complete is this decomposition in the case of the arsenite of bismuth or a mixture of arsenious acid and oxide of bismuth.

The arsenious acid may be detected in the alkaline liquid by acidulating and addition of hydrosulphuric acid. Arsenic acid, by acidulating, then supersaturating with ammonia (which always produces a slight flocculent precipitate of arsenate of bismuth, or lead if this be present), then filtering and adding magnesia mixture. The separation of the ammonio-magnesian arsenate takes place in a few minutes. If hydro-sulphuric acid be conducted through the acidulated liquid, the sulphide of arsenic makes its appearance only after a long time (sometimes hours) and much less distinctly, owing to free sulphur which is also separated.

Prof. Reichardt found that, by using stronger reducing metals, *f. i.*, sodium, in place of zinc or iron, the same results were obtained; that is, the reduction of any arsenic acid to arsenious was equally slow and imperfect.

If hydrogen was evolved from acid solutions, such as arise from the action of hydrochloric or sulphuric acid upon zinc, the least trace of either arsenic or arsenious acid at once affected the silver paper. Neither the presence of nitric acid, nor that of ammonia (possibly produced from the former) interfere with the reaction, as was shown by the addition of more or less nitrate of potassium.

If nitrate of bismuth is directly added to an alkaline or to acid liquid evolving hydrogen, the bismuth is first reduced and separated as black, flocculent substance. After this is all reduced, the action on the arsenic begins.

Prof. Reichardt, therefore, recommends to modify the test for arsenic as follows:

"Subnitrate of bismuth, when heated with solution of soda in excess, should not evolve ammonial vapors. If the alkaline filtrate be then supersaturated with hydrochloric or sulphuric acid, and zinc be added—a small pellet of cotton being pushed a short distance down the test-tube—the escaping gas should not color paper wet with an acid solution of nitrate of silver (containing 1 of nitrate of silver, 2 of water, and 2 of nitric acid).

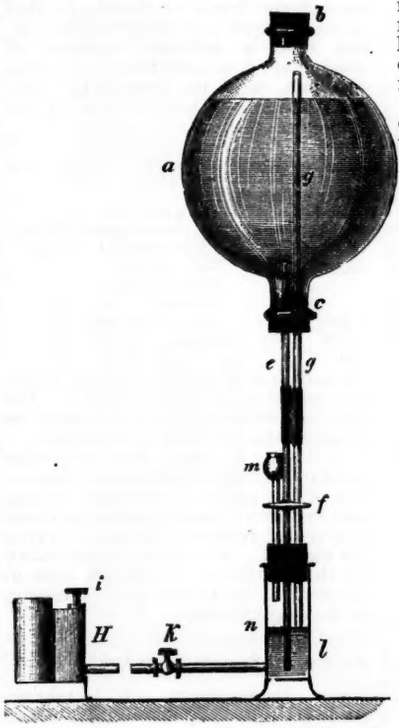
Prof. Reichardt's experiments showed that hydrosulphuric acid reduces nitric acid *only slowly*, and, therefore, does not hinder the arsenic reaction, so that the alkaline filtrate, from the reaction for ammonia, may be at once, and with perfect certainty, used for the arsenic test in acid solution. This experience would show that it is not necessary to drive off the nitric by sulphuric acid. It is, however, desirable to examine this point still more thoroughly.—After *Arch. d. Pharm.*, 221, 585.

* Journ. f. prakt. Chem., 109, 129.
† Ibid. (2), 20, 418. Arch. d. Pharm. (1880), 216, 121.

ALCOHOL LAMP WITH CONSTANT LEVEL.

NOT every laboratory is so situated that it can command the use of gas for lighting and heating purposes. Some of them (particularly mining-laboratories) are still compelled to have recourse to alcohol or some other burning-fluid. The usual alcohol lamps, however, have the disadvantage of burning too short a time and yielding a very variable temperature. These drawbacks are removed by the improvements introduced by Mr. C. Reinhardt.

FIG 1.

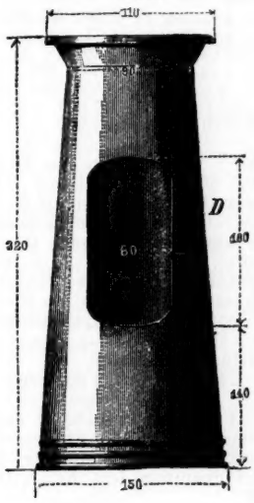


a (Fig. 1) is a two-necked glass globe of about five pints capacity, the upper neck being closed with a rubber stopper *b*, and the lower with a doubly-perforated rubber stopper *c*. The globe, which forms the reservoir of alcohol, rests upon the tinned iron cone (Fig. 2), which has an opening at the side, through which the faucet *f* may be regulated. Through the stopper *c* pass the air-tube *g* and the glass feeding-tube *e*, provided with the faucet *f*. *H* is an alcohol lamp constructed of strong sheet-brass, and having a double draft (a so-called Berzelius lamp). The flame may be regulated by means of the screw *i*; *k* is a brass faucet, *l* a small reservoir, with thrice-perforated stopper, through which pass the tubes *e*, *g*, and an additional air-tube *m*.

While the faucets *k* and *l* are closed, the stopper *b* is removed and the globe filled with alcohol by means of a faucet, so that none shall enter tube *g*. The stopper is then replaced. The level of the liquid in the small reservoir *l*—and thereby also in the lamp *H*—is determined by the higher or lower position of the air tube *g*. As soon as this is properly adjusted, the two faucets may be opened, when the alcohol will rise in the lower reservoir and in the lamp to the level of the lower orifice of *g*, and, as it is gradually consumed, more will descend from *a*.

This lamp has the great advantage of burning for a long time and maintaining an equable temperature. Owing to the cost of alcohol in this country, the lamp is not likely to be as serviceable as in Germany, where such fuel is not taxed.

FIG. 2.



Reinhardt's Constant-Level Alcohol Lamp.

It may be obtained from C. Reinhardt in Duisburg-Hochfeld.—*Zeitschr. f. Anal. Chem.*, 1884, 40.

Spider's Web as an Antiperiodic.

DR. OLIVER, having given spider's web in eighty-three malarial cases, concludes, first, that it can cure intermittent fever of quotidian or tertian type; second, the dose for an adult is thirty grains; third, it is less prompt than quinine, and therefore should not be employed in grave cases; fourth, it has a more pleasant taste than quinine; fifth, relapses are less frequent.—*Bull. Général de Thérapeutique.*

Venetian Red has been found by British analysts to be used in the manufacture of certain German sausages as a means for improving their color. The defendant in a suit for infringement of the Food and Drug Act stated that every 40 lb. of his sausages contained 32 lb. of lean legs of pork, 2 lb. of back-fat, 4 lb. of flour, 6 oz. of white pepper, 2 oz. of nutmeg, 2 oz. of saltpeter, 12 oz. of salt, 2 oz. of Venetian red, and a little Cayenne pepper.

A New Method of Ascertaining the Presence of Cotton-Seed Oil in Olive Oil.

PROF. GIUSEPPE SERRA CARPI publishes, in the *Annali di Chimica applicata* (Milan, Sept., 1883, p. 161), a novel method for testing olive oil, which appears to possess some merit, and will, at least, be found of practical value in connection with other tests.

The author observed that, when pure olive oil, or a mixture of this with other fatty oils in different proportions, was cooled by a freezing mixture, the resulting solid mass differed both in color and in density. The density is here meant to be the resistance of the congealed oil to the penetration of a small, spindle-shaped piece of iron terminating with a cone, the base of which has a diameter of 2 millimeters, and which is 1 centimeter high. Such a cone was found to require only a force of 20 to 30 grammes to penetrate and sink in frozen cotton-seed oil (of any grade or source), while, in a mixture containing cotton-seed oil and $\frac{1}{4}$, or $\frac{1}{5}$, or $\frac{1}{6}$ parts of olive oil, the required force of penetration amounted to 40, 55, and 80 grammes, respectively.

The experiments were all made with samples of oils cooled for three hours in a mixture of pounded ice and salt, having a temperature of —20° C. (—4° F.).

Composition of Mixture.	Resistance in grammes offered to the penetration of the iron cone described above.	Color after three hours' cooling at — 20° C.
Pure Cotton Seed Oil...	25. 35.	Brownish-yellow.
Olive, + $\frac{3}{4}$ Cotton S. O.	36. 33. 34. 36. 35. 34. 34. 34. 36.	Light brownish-yellow.
" + $\frac{1}{5}$ Cotton S. O.	51. 51. 56. 55. 52. 53. 52. 52. 55.	Light greenish-yellow.
" + $\frac{1}{6}$ Cotton S. O.	60. 68. 71. 60. 65. 65. 66.	Still lighter do.
" + $\frac{1}{8}$ Cotton S. O.	750. 800.	Greenish-white.
" + $\frac{1}{10}$ Cotton S. O.	850. 850. 900. 920.	Whitish.
" + $\frac{1}{20}$ Cotton S. O	1,000. 1,000. 1,050. 1,200. 950.	Still lighter do.
Pure Olive Oil	1,300. 1,300. 1.250. 1,270. 1,400.	White.

Wishing to ascertain the smallest quantity of cotton-seed oil which, when mixed with olive oil of a given type, would produce a sensible alteration in hardness, he made mixtures containing, respectively, $\frac{1}{5}$, $\frac{1}{10}$, and $\frac{1}{20}$ of cotton-seed oil, and he found that even as small a quantity as the last-named considerably diminished the density, this diminution being equal to resistance of from 200 to 300 grammes less than with perfectly pure olive oil. And in the case of olive oils extracted with disulphide of carbon, and mixed with $\frac{1}{20}$ of cotton-seed oil, the resistance is still smaller, being 400 to 500 grammes less than with the pure oil.

Whether the same degree of resistance was offered by every kind of olive oil, no matter of what grade or country, has not yet been finally determined by the author, owing to the great scope of the investigation. Yet he feels, already at this time, justified in stating that this resistance or density is a peculiar characteristic of pure olive oil, frozen, as stated, for three hours. He did, indeed, find that low-grade and colored oils varied in this particular, but in no case did a genuine oil possess a less resistance than 1000 grammes, and the highest density of the best oil was 1,800 grammes.

This same method of testing will also betray other oils besides cotton-seed oil; for instance, rape-seed, sesame, and almond oil. Olive oil, having, by itself, a resistance of 1,400 grammes, when mixed with $\frac{1}{4}$ part of oil of sesame, will have a resistance of only 800 grammes. With $\frac{1}{4}$ of rape-seed oil it will have a "density" of only 7 grammes, and, with $\frac{1}{4}$ of almond oil, one of 700 grammes.

We append the author's table giving the hardness or resistance of a mixture of finest Lucca salad oil with first-quality cotton-seed oil.

[Note by ED. A. D.—Much reliance, of course, cannot be placed on the color, since this must be considerably affected by the color of the individual oils themselves before being mixed; nor does the author himself insist upon this point. The method will, naturally, only indicate the presence of some foreign oil or other which depresses the resistance of pure olive oil; the identification of the added oil, except in special cases, or in mixtures made on purpose, will have to be accomplished by other means.

It is to be regretted that the author did not clearly indicate the exact details of operating the method. In estimating the pressure or resistance, by grammes, how is this weight to be determined? In the absence of any directions of the author, and subject to his subsequent correction of any misconception on our part, we would carry out the process thus. We would provide a piece of thin iron-rod, having, at one end, a cone of the dimensions given by the author, and, at the other end, a small scale-pan. A small frame of iron-wire is to be so arranged that the iron-rod bearing the scale-pan is kept by it, without friction, in a perpendicular position. The oil having been frozen, the iron-rod is placed, through the frame or holder, so that its cone-shaped point rests on the oil, and then a sufficient number of weights are gradually placed upon the scale-pan, until the base of the cone just disappears below the level of the oil, sufficient time being given before the addition of more weights. The iron-rod, with scale-pan, should also be weighed and included in the total.

As it may be some time before the author concludes to publish a continuation of his paper, we venture to suggest the above manipulation, in order to give our readers a chance of trying the method. We claim no originality for the suggestion, but merely wish to supplement, temporarily, an omission in the original paper.]

A Cause of Spontaneous Combustion.

MR. BUCHHEISTER, of Hamburg, sends the following communication to the *Drogisten-Zeitung:*

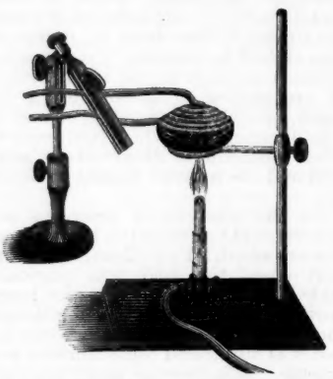
"It is well known that saw-dust is the best thing for cleaning greasy vessels, soaking up spilled oil from floors, and similar purposes. The following case will show, however, that special caution must be observed when using it.

"In my establishment there is always a small box containing saw-dust standing in the place where prepared paints are weighed, for the purpose of cleaning up any spillings. Some days ago, late in the evening, a potful of paint fell on the floor, and the last portions of this were, as usual, taken up by means of the saw-dust; but the latter, instead of being thrown at once into the fire, were, by oversight, thrown back into the box. As I was aware of the fact that such oily mixtures were liable to get hot and ignite, I had the box put outside of the house. How useful this precaution was appeared next morning, when a small pile of ashes was found to be the only remnant of box and saw-dust. I thereupon determined to ascertain the cause of this spontaneous combustion, and found that saw-dust soaked with linseed oil did not become sensibly heated; nor did this happen when oil of turpentine was mixed with the linseed oil. Heat was, however, at once developed, as soon as brown 'dryer' was added to the oil, and most strongly if pure 'dryer' was added. Varnish, prepared with boiled oil, likewise produced a strong heat.

"It is apparently the manganese compound of the linoleic acid contained in the dryer which is the cause of the heating.

"At all events, it is necessary at once to remove or destroy any saw-dust impregnated with varnish or dryer."

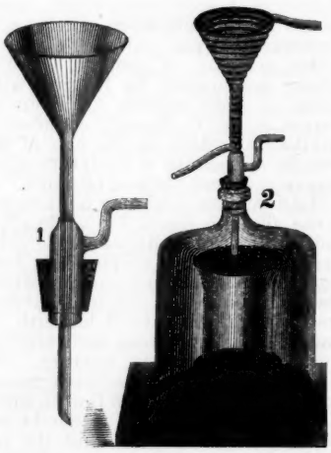
[The same may be said of cotton rags or waste when used for such purpose, and their liability to spontaneous combustion is greatly increased by sprinkling them with water.—ED. AM. DRUGGIST.]



AN IMPROVED SUBLIMATION-APPARATUS.

SUBLIMATION can be greatly hastened and made more perfect if the vessel in which the volatile vapors are to be condensed is properly cooled. The author has succeeded in subliming substances melting at quite low temperature by applying to the upper vessel (a large watch-glass in the example illustrated), a coil of fine lead-pipe, and passing a rapid current of cold water through it.

The same principle can, of course, be applied on a large scale in the sublimation of such substances as benzoic acid, sulphur, etc., etc.).—R. RICHTER, in *Journ. f. Prakt. Chem.*, 1883, 310.



STEAM FUNNEL FOR RAPID FILTRATION.

FOR rapid filtering the same author uses a special funnel, the neck of which is inclosed by a somewhat shorter but wider glass tube, from the upper neck of which arises the suction tube to be connected with the filter-pump. This does away with the necessity of using a doubly-perforated cork, a single perforation being sufficient. In place of filtering the liquid into an ordinary bottle, he places a beaker or other suitable vessel upon a piece of plate-glass and covers this with a one-necked bottle, the bottom of

which has been cut off and the ground edges of which are made to rest air-tight upon the glass plate by means of some fatty substance [for which we can recommend petroleum ointment.—Ed. A. D.]. The beaker may be adjusted by means of proper supports, at such a height that no spattering of the liquid can take place.

The funnel may be surrounded by a closely-fitting coil of small lead-pipe, through which steam may be conducted. This will facilitate the filtration of solutions which at ordinary temperatures would deposit some of the dissolved material. Figures 1 and 2 illustrate the construction of the glass funnel, also the bell-glass shaped bottle, and the coil of lead-pipe. There is a special kind of very thin tinned lead-pipe made for pneumatic bells. This is the kind used by the author.—R. Richter, *Journ f. prakt. Chemie*, 1883, 309.

How to Burn Numbers or Letters in Porcelain.

The following process is suggested by C. Reinhardt for the purpose of permanently marking crucibles with numbers or letters for the purpose of preventing mistakes in analysis.

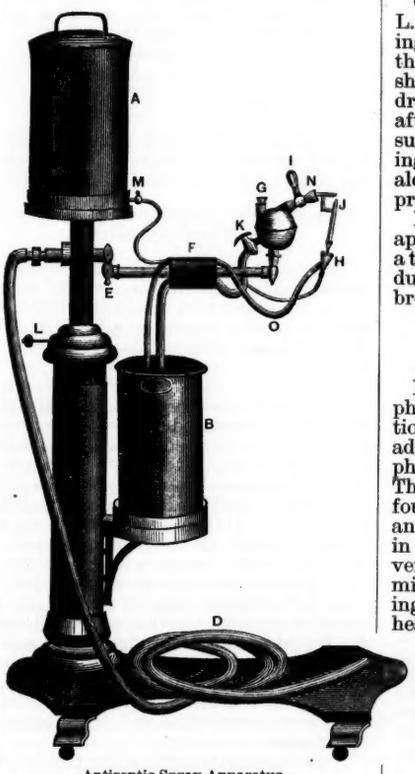
The same process, however, will serve for indelibly marking any kind of porcelain, provided only that sufficient care be taken during the heating to avoid cracking the vessel.

The marking is done with the usual encaustic colors used in porcelain-painting. The colors, consisting of silica, red lead, boracic acid, and some coloring metallic oxide (oxide of chromium, cobalt, etc.), may be had from any porcelain factory.

The finely pulverized coloring substance is levigated to a very fine, thickish paste with oil of anise or of lavender, in an agate mortar. By means of a thin, rather short hair-pencil the numbers or letters are painted on, and the crucibles or vessels placed on an iron plate and gradually heated. When the color is dry, the articles are transferred to a muffle, where the encaustic process is finished by a high heat. It is necessary to avoid putting on the color too thick, since it might peel off.—After *Zeitsch. f. anal. Chem.*, 1884, 42.

Soluble Essence of Ginger.

As far back as 1859 Mr. Barnard Proctor gave a formula for transparent ginger-syrups, in which the several bodies which cause opalescence were precipitated by means of hydrate of alumina. Two grains of common alum were dissolved in 6 oz. of distilled water and 6 drachms Tr. zingib. fort. mixed therewith, finally 10 minims of liq. potassæ were added, the whole allowed to stand for some time, then filtered and 12 oz. of sugar dissolved in the filtrate. This gives excellent results, and may be conveniently used where there is no outlet for soluble essence and little for clear syrup, the very small quantity of sulphate of potash not being perceptible. The same method has been applied to the essence alone with excellent results, the strong tincture—say one pint—is mixed with an equal volume of water containing 40 grains of alum; the mixture should be agitated thoroughly for twenty minutes, then 6½ drachms of liq. potassæ B. P. added, and again agitated and allowed to settle for two hours, when it may be filtered. This is a very rapid method of making the soluble essence, but it is somewhat deficient in aroma, as all such essences are. The researches of Dr. Tresh on the constitution of ginger show that an essence can be prepared containing a very large proportion of the aromatic and pungent bodies. Dr. Tresh first proposed carbonate of magnesia (Leary), but the essence so made becomes muddy after standing for a few weeks; the light carbonate, in the proportion of two ounces to the pint, has not this objection. We find Dr. Tresh's second method is exceedingly workable, and we give it in his own words. Take of strong tincture (lime) of finest Jamaica ginger, one pint, adding small proportions at a time of finely powdered slaked lime, until the tincture ceases to lose color, throw the whole upon a filter, and pass through the residue proof spirit until the product measures two pints. Now add, drop by drop, dilute sulphuric acid, until the rich yellow color suddenly disappears, let stand for twenty-four hours, filter, dilute with water to four pints, shake with a little powdered pumice or silica (by no means lime or magnesia), and filter at 0° C. if possible. As the lime is added the color deepens, but becomes lighter with greater additions. The product is very pale, but may be darkened by adding a drop or two of potash solution. Working on somewhat similar principles, we have mixed the tincture with its own bulk of water before



Antiseptic Spray Apparatus.

adding the lime, then mashed the lime with a little proof spirit, mixed the two liquids, shaking finally with fine sand, and laid aside until required, then filtered. The aroma may be improved by the addition of a few drops (to the pint) of essential oil of ginger. For ginger ale take

Soluble essence of ginger.	ʒ xix.
Essence of vanilla	ʒ i.
" " lemon	ʒ iij.
Tincture of capsicum	ʒ iv.
Burnt sugar	q. s.

—*Chem. and Drugg. Diary.*

IMPROVED SPRAY APPARATUS.

In a graduating thesis presented by B. Leroy Spiller to the Massachusetts College of Pharmacy, is described an improved apparatus for producing an antiseptic spray used in the Boston City Hospital, as follows: The illustration shows the apparatus complete with a coil of flexible hose for attachment to a steam radiator. The can A, holding the solution to be atomized, being of capacious size and the apparatus taking direct steam, it can be run without any attention whatever for any length of time; in fact it has been used without interruption in cases of diphtheria (when tracheotomy has been performed) day and night for a week or more.

To use the atomizer, connect the tube D with a steam-pipe, the steam passes through E (a common gas-bracket) to G, thence to spray-tube J. The handle I is used to direct the spray up or down, as desired; M is a cock controling the flow of liquid from A to the spray-tube J. The funnel H carries off the drip through the tube O into B. K is a pet-cock for drawing the condensed water from G. F, a wooden handle, serves to turn the bracket to right or left, at the point E, and also keeps the tubes O, P. and Q in position. L is a screw which is used to fix the stand at any height. The screw-cap N, used for connecting the spray-tube, is perforated around the edge with small holes; the object being allowed sufficient hot steam to surround the spray to prevent its becoming cool.

Method of Preserving Flowers, Leaves, and Other Parts of Plants.

German patent No. 23,792, issued to J. L. Wensel in Berlin, covers the following process. The respective parts of the plant are coated with a solution of shellac or resin, until they are perfectly dry. The moisture completely escapes after some time, through the fine fissures of the coating. Finally, the coating is removed by the cautions use of alcohol, whereupon the organs will present their orginal sharp outline.

If it is desired to give them a better appearance, they may be coated with a thin layer of an adhesive varnish and dusted with a suitably colored metallic bronze powder.

Phosphate of Codeia.

Dr. Fronmuller employs the phosphate of codeia for hypodermic injection. He says that it possesses the advantage over the muriate and sulphate of being much more soluble. The substance crystallizes in slender four-sided columns, is white in color, and of a bitterish taste, and is soluble in four parts of water. Its action is very like that of morphia; but it is milder, and the symptoms of poisoning (such as great weakness, intense headache, bilious vomiting, etc.) are much less often encountered. It seldom causes local irritation when subcutaneously injected. The dose should be at least double that of morphine. The phosphate of codeia is especially recommended in the case of women and children.

Belladonna Poisoning.

Dr. B. F. Nicholls reports the case of a lady who drank a pint of coffee in which there had been surreptitiously placed some belladonna leaves, and whom he saw two hours and a half afterwards, when there were present the following symptoms: universal tingling, burning and itching, muscular twitching, numbness, and constriction of the throat, great thirst but inability to swallow, continuous retching, pupils widely dilated, considerable eruption, with symptoms of profound narcosis. He immediately gave ¼ gr. of morphia hypodermically, and followed it up with ⅛ gr. in fifteen minutes. The patient steadily improved, being kept under the influence of morphia for twelve hours, with sufficient brandy to counteract the subsequent prostration. —*Phila. Med. Times.*

Oxalic Acid in Pie-plant.—According to B. W. Damon, Ph.C. (who reports the resuts of his examination in the *Contrib. from the Chem. Lab. of the Univ. of Mich.*), the fresh stalks of pie-plant contain 0.11 per cent of free oxalic acid and 0.08 per cent in combination with lime.

On the Silver Test for Arsenic and some new Silver Compounds.*

SINCE the appearance of the last German Pharmacopœia, a number of criticisms have been made on the silver-test for arsenic (for instance, in bismuth salts) prescribed in this work. Some writers have shown that, under certain conditions, no stain is produced on paper moistened with solution of nitrate of silver, even though the substance tested did contain arsenic. Others have stated that stains are produced, in certain cases, even when arsenic is absent. Others again have indicated methods and conditions the observance of which insures the reliability of the test.

The doubt thus thrown on the silver test adopted by the German Pharmacopœia—where the arsenetted hydrogen is developed in an *acid* solution—might perhaps be supposed to be applicable also to the silver-test adopted by the U. S. Pharmacopœia; yet the conditions in this case are quite different, inasmuch as the gas is developed in an *alkaline* solution. At all events, it would not be safe to judge both methods by one and the same standard; and, until the test of the U. S. Ph. has been shown to be liable to fallacy, it should be allowed to pass as satisfactory, so much the more as it has been very carefully examined and very frequently applied both before the publication of the U. S. Ph. and afterwards, without exciting any suspicion of unreliability.

Prof. Th. Poleck and Mr. K. Thümmel have recently published an elaborate paper containing the results of their researches on the action of hydrogen and gaseous hydrogen compounds on nitrate of silver, which throws light on the discrepancies observed by other experimenters. We shall only give the salient points, owing to the length of the paper.

If diluted hydrochloric or sulphuric acid be poured upon zinc, in a test-tube, in presence of a substance containing arsenic, a pellet of cotton being pushed a short distance down the test-tube, and the latter being covered with a piece of paper moistened with strong (1 : 1) solution of nitrate of silver, the following changes will be noticed. The moistened spot will be colored *lemon-yellow*, first underneath, then above, and around the edge of the spot a *brownish black* margin will appear which gradually spreads toward the centre and finally blackens the whole spot. This takes place much sooner on the under surface. If large quantities of arsenic are present, and the gas is given off energetically, the yellow color is only transient, and the spot rapidly becomes black. If the spot is moistened with water, while it is still yellow and only has a black edge, *it turns black at once all over*, and at the same time reddens blue litmus-paper, while the concentrated silver solution itself originally had a neutral reaction.

It was soon found that sulphuretted† and phosphoretted hydrogen produce the same kinds of spots, while antimonetted hydrogen behaves somewhat differently.

1. *Action of Sulphuretted Hydrogen upon Concentrated Solution of Nitrate of Silver.*

The concentrated solution here and subsequently meant contains one part of the salt and 0.7 to 1 part (not more) of water.

If the gas be made to act upon a piece of paper moistened with a drop of the solution, the stain becomes yellow to greenish-yellow, surrounded with a black edge, and very gradually changes to black. When moistened with water, it *does not at once become black*, but only after some time.

If, instead of the *concentrated* solution of silver, one of less strength is used (containing one of salt and two or more of water), *no yellowish-green* color is obtained, but the spot becomes *brownish-black* or *black at once*.

The yellowish-green coloration was found to be due to the formation of a peculiar compound, obtained in quantity by conducting the gas through the concentrated solution. The yellowish-green precipitate decomposes when washed with water or alcohol, but may be washed almost completely by dilute nitric acid (one part nitric acid sp. gr. 1.180 and two parts water). When dry, it is an amorphous dark-green powder with a yellowish tint, sensitive to light, and decomposed by water into nitrate and sulphide of silver. The compound is formed thus:

$$\underset{\text{silver nitrate}}{3AgNO_3} + \underset{\text{hydrosulphuric acid}}{H_2S} = \underset{\text{(new compound)}}{AgS.AgNO_3} + \underset{\text{nitric acid}}{2HNO_3}$$

$$\underset{\text{(new compound)}}{4(Ag_2S.AgNO_3} = \underset{\text{nitric oxide}}{4NO_2} + \underset{\text{silver}}{4Ag} + \underset{\text{silver sulphide}}{3Ag_2S} + \underset{\text{silver sulphate}}{Ag_2SO_4}$$

A similar compound was also obtained, in which sulphate of silver took the place of the nitrate: $Ag_2S.Ag_2SO_4$.

2. *Action of Arsenetted Hydrogen upon Nitrate of Silver.*

It is well known and firmly established that arsenetted hydrogen acts upon *dilute* solution of nitrate of silver so as to produce metallic silver, while arsenious and nitric acids go into solution.

If, however, the solution of silver is *concentrated*, the reaction is entirely different. As stated above, the yellow stain (with black edge), when moistened with water, *at once turns black*, which distinguishes the spot sharply from that produced by sulphuretted hydrogen. If the gas is cautiously passed through the concentrated solution, the latter becomes intensely yellow, without depositing a precipitate. This yellow color lasts for several days (even when nitric acid is added); then the liquid becomes colorless, with separation of metallic silver, while arsenious and arsenic acids are in solution. If the yellow solution is warmed, it at once become colorless and deposits metallic silver.

Numerous attempts were made to isolate this yellow compound, but without success. To clear up its nature, recourse was, therefore, had to an estimation of the separated silver and the proportion of the latter to the arsenious and nitric acids. This yielded results showing that the compound was constituted analogous to those previously described, namely, that it was a combination of arsenite and nitrate of silver. Its formation may be thus explained:

$$\underset{\text{arsenetted hydrogen}}{H_3As} + \underset{\text{silver nitrate}}{6AgNO_3} = \underset{\text{(new compound)}}{(Ag_3As.3AgNO_3)} + \underset{\text{nitric acid.}}{3HNO_3}$$

When decomposed by water it splits up thus:

$$\underset{\text{(new compound)}}{(Ag_3As.3AgNO_3)} + \underset{\text{water}}{3H_2O} = \underset{\text{silver}}{6Ag} + \underset{\text{arsenious acid}}{H_3AsO_3} + \underset{\text{nitric acid}}{3HNO_3}$$

3. *Action of Phosphoretted Hydrogen upon Concentrated Silver Solution.*

Phosphoretted hydrogen behaves exactly like arsenetted hydrogen.

A similar compound was obtained, which was likewise determined indirectly, and has the composition: $Ag_3P.3AgNO_3$, the reactions occurring no doubt in the same manner as in the preceding case, excepting that its de composition by water is not as regular as that of the former compounds.

4. *Action of Antimonetted Hydrogen upon Concentrated Silver Solution.*

In this case a similar compound was obtained as with arsenetted and phosphoretted hydrogen: $Ag_3Sb.3AgNO_3$.

If the gas comes in contact with paper moistened with concentrated silver solution, the spot becomes dark brownish-red to black at the edge, while the central portion of the stain is either not colored at all or merely rendered gray. With ammonia it turns black. If the nitrate of silver solution is more dilute, one of salt and 2 of water, the stain becomes brownish-red; if still more dilute (one to three or more of water), the stain turns black.

5. *Action of Pure Hydrogen upon Concentrated Silver Solution.*

If pure hydrogen comes in contact with paper moistened with the solution, the spot assumes, after a while, a faint brownish tint at the edges, while the centre remains colorless. If it is then moistened with water it remains uncolored, but reddens litmus paper. When the gas was passed through the solution, a portion of the silver was precipitated in a metallic state.

It appears, therefore, from the researches of the authors, that the action of *arsenetted hydrogen* upon a *concentrated* solution of silver is quite characteristic and delicate, and capable of detecting the most minute quantities of arsenic. The characteristic, light-orange to lemon-yellow stains, with brownish-black edge, when moistened with water, *at once* become black, while the greenish-yellow stains produced by sulphuretted hydrogen remain *at first* unaltered, when wetted with water, and those produced by antimonetted hydrogen have a brown edge, with grayish-white centre.

Only the stains produced by phosphoretted hydrogen cannot be distinguished, by their behavior, from the arsenic stains. But, since all compounds of phosphorus liable to give out phosphoretted hydrogen (phosphides, hypophosphites, and phosphorous acid) may easily be oxidized to phosphoric acid by treatment with chlorine or bromine, and since phosphoric acid is *not* reduced by nascent hydrogen, while any arsenic acid at the same time produced *is* reduced—it will be easy to avoid mistakes from this source. Sulphuretted hydrogen or sulphurous acid, if present, can easily be oxidized to sulphuric acid by a few drops of iodine solution. [The oxidation of all of the above is accomplished in this way, or else by treatment with bromine water.]

Concerning the sensitiveness of the test, the authors obtained a plainly-visible yellow stain with as small a quantity as 0.005 milligrammes ($\frac{1}{3000}$ grain) of arsenic, which was still colored brown (though not black) by water.

The Relative Merits of Chloride of Calcium and of Sulphuric Acid as Drying Agents.

DR. E. FLEISCHER has made experiments by means of a hygrometer, for the purpose of ascertaining whether chloride of calcium or sulphuric acid are preferable as agents for abstracting moisture in the desiccator.

He found that the withdrawal of moisture, when chloride of calcium was employed, was not only exceedingly slow, but that it was always quite imperfect. In the case of strong sulphuric acid (66° B.), however, he found that the absorption of moisture was perfect, and that it acts about fourteen times more rapidly than chloride of calcium.—*Zeitsch. f. anal. Chem.*, 1884, 34.

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* Abstract of a Paper by Th. Poleck and K. Thümmel in Ber. d. Deutsch. Chem. Ges., 1883, p. 2,435.

† In the U. S. Ph. test, this gas, as well as the antimonetted hydrogen are excluded, since they are not given off from the alkaline solution.

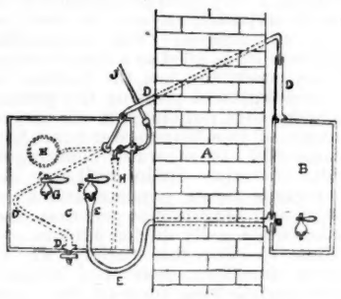
Bombay Bazar Scammony.

THE Sakmuniya, or Bazar Scammony sold in Bombay is all fictitious. It is said to be made in Surat, and does not in the least resemble any kind of genuine scammony. It occurs in irregular fragments of a bright green color, somewhat translucent at the edges, and having a resinous fracture; its odor and taste are suggestive of common resin. Rectified spirit dissolves the resin, and leaves a residue of green coloring matter and gum; the former is evidently of vegetable origin. It is difficult to ascertain what is the purgative principle of this mixture—possibly some resin derived from one of the Convolvulaceæ. Sometimes a black sakmuniya is met with; this is also spurious, and is resinous in taste and smell, but has a more earthy appearance than the green variety. Rectified spirit dissolves out a quantity of resin and leaves a black residue which, under the microscope, is seen to be made up of tufts of vegetable hairs, numerous small carbonaceous particles, and small irregular crystalline particles. Treated with dilute hydrochloric acid, it effervesces feebly after a short time; with strong acid it effervesces strongly at once, and the vegetable matter is destroyed and forms a green solution. In Persia genuine scammony is obtainable, but I have not been able to ascertain whether it is produced in that country or imported. The Arabs and Persians call it Mahmoodah. Meer Muhammad. Husian, in the Makhzan, gives a good description of scammony and the plant which produces it. He tells us that artificial scammony is made from the juice of Calotropis gigantea, mixed with the flower of a kind of pulse called in Persian "Karsanah." His account of the uses of the drug does not differ materially from that given in European works, with the exception that scammony when baked is said to lose its aperient properties and to act as a powerful diuretic. The baking process consists in inclosing the powdered drug in a bag and then placing the bag inside an apple or quince which has been hollowed out for the purpose; the apple is then inclosed in dough like a dumpling and baked in an oven.—W. DYMOCK, *Veget. Mat. Med. of West India*, p. 474.

DISTILLED WATER.

AT the Pharmaceutical Conference held at Edinburgh in 1871, Mr. C. A. Staples explained a method of obtaining distilled water from the kitchen boiler. The boiler is a small cast-iron one, such as is usually supplied with an English kitchen range for a small family. It is self-filling by a small cistern and ball-cock in the usual manner. This cistern having cold water constantly flowing through it is made to serve as a condenser. The drawing shows the arrangement. The lid of the boiler (B) is closed by a paste of castor oil and whiting, which does not harden. The top plate has a hole at the back corner near the wall (A) into which a piece of brass tube (D), about 9 or 10 inches long, is fixed. Mr. Staples used a piece of gas pillar, such as is screwed into a counter. To the top, a piece of half-inch tube of pure tin* is fitted, bent to an angle of 60° or 65°, which, passing through the brick-work at a fall of about 25° or 30°, projects a few inches beyond the wall, where the end, slightly contracted by a file, and curving downwards, is received into the enlarged mouth of a similar piece of tube, into which it fits with sufficient firmness without cement. It then enters the condenser near the top, is curved half round the inside out of the way of the ball, and passes out at the centre of the bottom, being secured to the condenser by screw-joints; that at the top may be an ordinary brass one, but the lower one should be cast in pure tin, or, if a brass one is used, it must be carefully tinned inside and out; for, although not in immediate contact with the distilled water, a slight moisture might collect on it, and injure the water.

The lower end of the pipe should be tied over with muslin, or closed and pierced with fine holes, since insects, attracted by the warmth and moisture, might enter it in the night. In fact, the greatest care must be taken to insure the purity of the metal, and that the inside of the pipe, from the point of condensation, is protected from any metallic or other contamination. The condenser should be much larger than usual, and have a light fitting inside, or steam will collect on it, and flow down the outside of the condenser. It should stand on a stool, with a hole for



the pipe to pass through, under which the jar to receive the distilled water could be placed out of the way. The ball-cock should have a piece of pipe soldered to the nozzle, that the cold water may reach the bottom of the condenser. The pipe for feeding the boiler (E) should come from about the centre of the condenser, and curve downwards, so that a portion may be below the bottom of the boiler; for without this precaution, the heated water would circulate to and from the condenser and the water would soon become nearly as hot as that in the boiler itself. This simple precaution effectually prevents it, as the heated water will not pass through the cold part of the pipe below it without pressure. It should also be furnished with a stop-cock; all the joints should be secured by a few discs of stout brown paper over the flange, which, when drawn tight by the nut, effectually prevents leakage, and are easily removed if required for alteration, repair, or cleansing. But if they are fixed with lead cement, they become so firm that they cannot be removed without injury. The condenser should have a waste-pipe, unless the main cistern has a stop-cock to shut off the whole supply at night, or the condenser may overflow, since the ball-cock must necessarily work easily, and a slight leakage might be expected. The hole in the brick-work should have a piece of iron pipe cemented into it to form a regular slope for the steam pipe, otherwise it might drop into the hollow space, and water collect in it.

Mr. Staples found the supply of distilled water obtained by this contrivance abundant, and pure enough for any purpose. It is perfectly self-acting; the boiler fills itself, and the water distils itself. It does not cause any inconvenience, interfere with any domestic or culinary operation, or limit the use of the boiler; on the contrary, it is greatly increased, as an abundant supply of heated water may be drawn from the condenser, care being taken to close the stop-cock, and keep it closed for ten or fifteen minutes, or until the heated water is replaced by cold. It is perfectly safe, as the steam escapes freely through the tube, and the lid of the boiler, although steam-tight, may be raised with the thumb and finger. Little attention is required beyond placing a vessel to receive the distilled water, and seeing that it does not overflow, the supply being so copious that sometimes while cooking a dinner for a moderate family several gallons will come over.—*Chem. and Drug. Diary.*

* For a very large boiler, a three-quarter or even one inch pipe might be required, and the boilers should be made of wrought iron.

Effect of Lime Juice on the Menses.

A CONTRIBUTOR to the *Lancet* states it as a fact that the sucking of the juice of one or two lemons by women suffering from an inordinate flow of the menses has the effect of checking the same. This statement, in connection with the reports of the effect of lime juice upon the amative instincts of the male, would seem to tend to establish a belief in its anaphrodisiac properties.

Hydriodic Acid in Asthma.

DR. J. OLIVER (*Drug.*) says that the syrup of hydriodic acid given after the following fashion yields good results: Begin with small doses, twenty or thirty drops well diluted with water, and taken about half an hour to an hour before meals; if taken after meals it may disturb the stomach, set up fermentation, and cause colic, acid stomach, and pain in the head; increase the dose gradually. The dose should not exceed a tablespoonful.

Sweating Feet.

M. VIEUSSE, principal medical officer of the Medical Hospital at Oran, states that excessive sweating of the feet, under whatever form it appears, can be quickly cured by carefully conducted friction with the subnitrate of bismuth, and even in the few cases where this suppresses the abundant sweating only temporarily, it still removes the severe pain and the fetidity which often accompany the secretion. Dr. Vieusse has never found any ill consequence to follow the suppression of the sweating.

To Abort a Stye.

DR. LOUIS FITZPATRICK, who has recently returned from Egypt, where all kinds of eye affections are extremely common, writes to the *Lancet* that he has never seen a single instance in which the stye continued to develop after the following treatment had been resorted to: The lids should be held apart by the thumb and index finger of the left hand or a lid-retractor, if such be at hand, while the tincture of iodine is painted over the inflamed papilla with a fine camel's hair pencil. The lids should not be allowed to come in contact until the part touched is dry. A few such applications in the twenty-four hours are sufficient.

Capsicum in Piles.

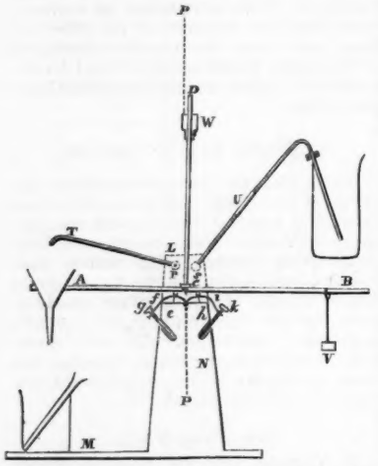
THIS Vidal regards as the best remedy in piles. He prescribes three or four three-grain pills daily, half at breakfast time and half at supper time. Under its influence, congestion and all the painful symptoms which accompany it disappear rapidly.

Tannate of Sodium.

TANNATE of sodium has been lately recommended instead of tannin to lessen the excretion of albumen in albuminuria; but the statements concerning its value are somewhat conflicting. Ribbet found that it lessened the excretion of albumen in animals. Dr. Brien, on the other hand, found, in four carefully observed cases of patients suffering from chronic albuminuria, that it was of no use whatever; some patients can take it well; others vomit after every dose.—*Practit.*, Oct., p. 204, and *Pharm. Journal.*

FILTRATION BALANCE.

ALL the arrangements for the automatic washing of precipitates, of which I have seen previous mention, provide for keeping the water at nearly a constant level in the funnel. By this method of washing a precipitate, usually much more water is necessary than if each portion is allowed to drain off before a new addition of it. At the Cincinnati meeting of the American Association for the Advancement of Science, in 1881, Prof. H. Carmichael, of Bowdoin College, Maine, exhibited a filtration and evaporation balance, which I must describe before giving my modification of it.



The figure without the upright *CD* illustrates this balance, which is most convenient for delivering a large amount of liquid on a small filter, or into a small evaporating dish.

A beam, *AB*, balanced on the knife edge (or pivot) *C*, supports in a ring, *A*, the funnel which is equipoised by the weight *V*; *s* and *r* are corks passed through the upright *NL*, and hold in any position the tubes *U* and *T* which are bent to pass through them. Close to *C*, and under the beam, passes a rubber tube, *e*, which connects the tubes *U* and *T*, and conducts the wash water or other liquids. By use of thumb-screws *g* and *k*, the little brass arms *f* and *i* may be raised to adjust the pressure upon the rubber tubes *e* and *h*.

To the above-described apparatus I add a vertical rod, *CD*, fastened to the arm *AB*, and at right angles to it; on this is supported a weight, *W*, whose height is fixed by the binding screw also sliding on this rod. I employ for two-inch funnels a cylindrical lead weight, *V*, weighing about 300 grms; for three-inch funnels, about 500 grms. The apparatus is used as follows:

Having brought all the precipitate on the paper in a funnel, allow it to drain, put the funnel in place, and fix the weight *W* near *D*; then slide the weight *V* on *B* until it will just be able to raise *A* from its lowest position, when, of course, *W* will move to the right of the vertical *PP*. Then water will pass through *e* and drop into the funnel until it is nearly full, when (if *W* and *k* are adjusted properly) *A* will fall, bringing *W* to the left of the vertical, and in this position no water will pass through *e*. When the funnel has again drained, the arm *A* rises and (the water again flows into the funnel) this alternating motion continues so long as water is supplied. I have made *AB* of iron, 10×4 *mm*. The upright *NL* is 35 *mm*. thick; other dimensions may be taken from the figure. It is essential that the tube *e* admits of being closed by very gentle pressure (less than 100 grammes) of the knife edge cut on the under side of the beam. I use for this pure rubber tubing, 2.5 *mm*. exterior diameter.

Removing *W*, the apparatus may be used as was intended by Prof. Carmichael. When conducting an evaporation, the dish rests in *A*, and the gas passes through *h* to the burner, so that, when the liquid is exhausted, and before that in the dish has come to dryness, the arm *A* will rise, compress *M* and so extinguish the flame.—F. P. DUNNINGTON, in *Amer. Chem. Journal.*

Lime-Juice and Glycerin.

PREPARATIONS of this class are generally of three kinds, viz., (*A*) simple mixtures of lime water and an oil, (*B*) inseparable emulsions containing a more powerful alkali, and (*C*) true mixtures of lime-juice, glycerin, and an oil (such as Rimmel's). All have the same end in view; that is, to restore and beautify the hair.

Class *A* cannot be made inseparable, but, in the proportion of three parts of almond or sesame oil to five parts of fresh lime water, the latter being added very gradually and with constant shaking, a very good preparation is obtained, and such as may be used for common purposes. The inseparable kind is quite as good as a hair-dressing as any other, and has the further recommendation of pleasing the public. To make this, put one pint (20 oz.) of almond oil in a Winchester quart bottle and add 4 oz. of water containg 80 grains of borax. Shake well and add 3 drachms liquor potassæ and q. s. lemon and bergamot to perfume, and shake occasionally during 3 hours.

Class *C*. For this variety Mr. F. Barret (in *Phar. Jour. and Trans.*), gives the following formula for "elegant" preparation:

White wax	℥ ½
Almond oil	℥ 8

Dissolve the wax in the oil by heat and add gradually:

Glycerin	℥ 1
Lime juice	℥ 1
Rectified spirit	℥ ½
Water	℥ 2
Ess. lemon	℥ 2
Ess. oil of almonds	gtt. 5

To these formulæ we may add that of a preparation of a different nature, but strictly a lime-juice and glycerin. It has the disadvantage of being a little thin, and separates into two layers on standing, readily combining, however, on agitation. It forms an admirable hair-dressing for hard and soft hair:

Tincture of senega	½ drachm
Almond oil	1 oz.

Shake well, and add the following mixture gradually:

Glycerin	2 drachms
Lime-juice	1 oz.
Rose water	2 oz.

Perfume with

Essence of lemon	10 drops
Essence of bergamot	5 "

—*Chem. and Drug. Diary.*

Crotalus.

THIS is a remedy used by homœopathic physicians in hemorrhagic fevers of zymotic diseases, and prepared, according to Dr. Hayward (*Lancet*) by pressing the poison from the poison sacs of living rattle-snakes while the serpents are rendered insensible by chloroform. The finger and thumb are used to exert the pressure, and the poison is received in a small vial, and to preserve it from decomposition it is mixed with nine parts of pure glycerin. Subsequent dilutions are made with glycerin, 1 part, to 3 parts of alcohol. The first centesimal dilution is turbid, and requires to be shaken. 3 to 5 drops of this, used hypodermically, constitute a dose. Dr. Hayward administered the third dilution internally in doses of 3 drops in a spoonful of water.

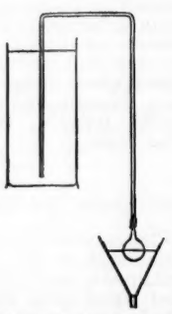
[Weir Mitchell has shown that the undiluted poison can be taken into a healthy stomach without apparent effect, and that to induce toxic effects the poison must be introduced into the capillaries or lymphatics. The value of the remedy when used internally is therefore very doubtful. — ED. AM. DRUG.]

Bromide of Arsenic in Diabetes.

A WRITER in the *Boston Medical and Surgical Journal* gives an interesting translation of a case of diabetes treated by Professor Korány, of Budapest, by the bromide of arsenic (*Wiener Med. Zeitung*, Jan. 16th, 1883). The patient was a man, aged twenty-two, who was completely prostrated by the disease, and who came to his clinic February 15th, 1882. Under the arsenic treatment, he was discharged on May 9th, 1882, so benefited that he was immediately enrolled for military duty. The amount of sugar in his urine at the start was from 170 to 411 grammes *per diem*, but this was eventually entirely suspended, even after the drug was withheld and a mixed amylaceous diet was resumed. For some days previous to the administration of the bromide of arsenic, he was put on a diabetic diet alone, and on the eleventh day (21st of March), there was scarcely a trace of sugar to be found. The dose used was from 3 to 6 drops a day.

The translator has under the same treatment a patient who presented much the same symptoms, in whose urine there is 7 per cent of sugar, but is unable as yet to give any pronounced opinion.

The drug is a compound of bromine and arsenic, the nature of which is not yet distinctly determined, but it certainly is deserving of more extended trial in diabetes. It is usually employed in form of "Clemens' Solution of Bromide of Arsenic," the formula of which was given in NEW REM., 1883, 372.



AUTOMATIC FILTRATION,

WHEN large quantities of liquids such as reagents, have to be filtered in the laboratory, it is often convenient to have some means by which the filter is kept filled. The usual "bird-fountain" method which is applicable in some cases has the disadvantages of requiring the inverting of large bottles or flasks filled with liquid, and besides this it does not maintain the liquid at a constant level in the filter.

The following apparatus has been found more convenient:

To the longer limb of a siphon is attached a short piece of India-rubber tube projecting a little beyond the tube; the India-rubber is closed by the narrow conical stem of a small glass globe which floats on the surface of the liquid in the funnel; when the liquid rises to a certain height, the float is lifted, and stops the flow of the liquid, the narrow stem on the flask, which passes some distance into the siphon, acting as a guide.

The apparatus keeps the liquid in the funnel at a constant level, and may be left without attention until the filtration is complete.—E. E. ROBINSON, in *Chem. News*, Dec. 7th.

Tincture of Nux Vomica.

I HAVE noticed the articles and notes which have appeared lately on the above subject. I have seen and tried many samples of the tincture supplied by wholesale houses, nearly all of which possess a peculiar drug-mill taste and odor, and are not so bright, clear, and bitter as they might be, and I consider the process given in the British Pharmacopœia unsatisfactory, the steaming, drying, and powdering preventing many chemists from making the powder and preparing the tincture therefrom. The following process I devised some few years ago. It is to make the tincture from the rasped beans, thus: place the beans, two at a time, in a small vice fastened to the edge of a table, and going over the beans with a long rough steel rasp, moving the rasp from left to right, not across the beans; this quickly reduces them to small particles; the small portion of the bean retained by the vice may either be thrown away or saved for making the powder of nux vomica. Now take of the rasped beans, 2 oz.; spirit of 20 per cent proof, 20 oz.; macerate with 15 oz. of the spirit in a closed vessel for four days, shaking occasionally, then transfer to a percolator and when the fluid ceases to pass, continue the percolation with the remaining 5 oz. of spirit; then press, filter, and add sufficient spirit of 20 per cent proof to make up to 20 oz. This makes a superior tincture, bright, clear and very bitter, and free from the contaminations of the drug mill. Care should be taken not to touch the vice with the rasp, but if such happens any particles of iron may easily be removed by a piece of magnetized steel. For chemists whose demand is small I would recommend the following process: Place 1 oz. of the drug in a bottle with 10 oz. of spirit of 20 per cent proof and macerate for ten to fourteen days, agitating occasionally, then filter. The spirit of 20 per cent proof I have found to give a far better tincture than when rectified or proof spirit is used.—P. GELSTON, in *Chem. and Drug.*

Tannate of Quinine in Mixtures.

IT is well known that tannate of quinine cannot be minutely divided or brought to the condition of a milk by mere trituration with water or syrup. Since this salt is so little soluble, its therapeutic activity should be augmented by as fine a division as possible.

G. Weiss recommends to accomplish this in the following manner: one part of tannate of quinine, one part of syrup, and one and one-half parts of alcohol are rubbed together, when complete solution will take place. The requisite amount of water is now added, whereby the tannate of quinine is again precipitated in form of an emulsion, being suspended in a very finely divided condition.—*Pharm. Zeit.*, Aug. 29th.

Solubility of Tasteless Tannate of Quinine in Gastric Juice.

E. C. FIELD, Ph.C., of Battle Creek, Mich., remarks that there are two varieties of tannate of quinine, one the tasteless tannate, the other the ordinary tannate obtained by precipitating the sulphate dissolved in dilute sulphuric acid, and which contains traces of the sulphate. The salt used in these experiments was made by the formula given in the Handbuch der Pharmaceutischen Praxis, Vol. II., 1,331, and gives a yield of forty parts of the tasteless tannate from ten parts of the sulphate. Mr. Field used as a solvent, in four trials, two-tenths per cent solution of hydrochloric acid. In two trials artificial gastric juice made by dissolving in 200 *cc.* of a two-tenths per cent solution of hydrochloric acid 4.147 grammes (64 grains) of pepsin, making a solution warranted by the manufacturers of the pepsin to dissolve 768 grains of freshly coagulated albumen, but which, on trial, was found capable of dissolving only one-twelfth as much. In two other experiments real gastric juice obtained by means of a canula from a healthy dog was employed.

Omitting the details of the experiments which also included the administration of the drug to the human subject, the writer considers it clearly proven that the tasteless tannate of quinine, as a medicine, is nearly and practically inert, and even if a strong digestive juice should be able to dissolve a minimum dose of eight grains (corresponding to two grains of the sulphate) the individual for whom the juice acted would receive the effect of about six grains of tannin, which might be the last effect desired.

Rum and Cinchona Hair Tonic (*Weekly Drug News*).

Tincture red cinchona	3 ounces.
Jamaica rum	1 ounce.
Glycerin	1 "
Tannin	½ drachm.
Cologne	9 ounces.

Mix well, and if necessary for a clear preparation, filter through magnesium carbonate. Apply twice a day, rubbing well into the scalp.

[The addition of the tannin is unnecessary and worse than useless. The condition of the scalp which calls for the use of a "tonic" demands the application of a local stimulant rather than one which shall serve as an astringent, and still further lessen the blood supply. In most cases a fatty substance which will prevent the hair becoming brittle and take the place of the natural fatty secretion (usually deficient in such cases), will be far superior to the above, and the use of a *soft* hair brush will stimulate the scalp and carry the oil to the roots of the hairs.]

Chloroform Water.

CHLOROFORM WATER, prepared by pouring an excess of chloroform into a bottle three-fourths full of distilled water, shaking, allowing it to stand until the excess of chloroform is deposited, and then decanted, contains ten grammes to the litre, and may be used as a local irritant in its full strength, or reduced with an equal or less quantity of water, for the relief of local pain. In using it, a hot poultice should be applied and followed by a compress wet with the solution, or when the pain is less severe, the compress, similarly wet, may be used alone. According to Vigier, chloroform water is more stable than chloroform alone, resisting the decomposing action of light indefinitely.

When used internally as a vehicle for bromides, salicylates, chloral hydrate, perchloride of iron, morphine, etc., or by itself, to relieve nausea, it should be much diluted withwater.

With its aid an emulsion may be made as follows, which will admit the prolonged use of gamboge as a hydragogue cathartic:

Gamboge	1 gramme.
Chloroform water (saturated)	200 grammes.
Orange flower water	250 "

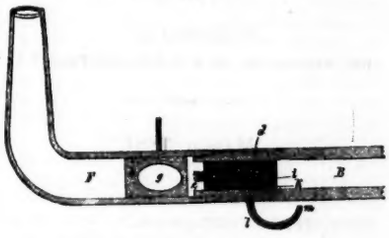
Emulsionize thoroughly. Dose: a tablespoonful in the morning.—*L'Union Médicale.*

Phosphatic Glass is said by Didot to be made from calcium phosphate, and to resemble ordinary glass (silicate of potash or soda). Tubes and retorts have been made from it, and are likely to be of service in the manufacture of compounds of hydrofluoric acid which does not attack it.—*Drug News* from *L'Union Pharm.*

GASOLINE BURNERS FOR LABORATORY USE.

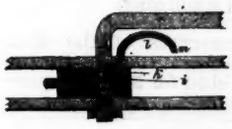
DR. F. URECH is the inventor of a laboratory lamp intended for the burning of the low-boiling portions of petroleum (spec. grav. 0.69 to 0.70, boiling between 70° and 120° C.).

A reservoir containing the gasoline, constructed of tinned iron or copper, and closed with a screw-stopper, is suspended in a suitable place on the wall, or on the outside of the building. From the bottom of the reservoir a tube (*B*) leads to the burner. Through the entire length of the tube *B* passes a wick. At the end of tube *B*, it is provided with a stop-cock sitting in a metallic filling *c*, and perforated with a fine hole, which terminates against a metal plug *e*, pierced by several still finer channels, through which the fluid



finds its way into the lamp proper. Fig. 1 shows the general aspect of the end of the tube *B* with the lamp attached. Fig. 2 shows the position and shape of the faucet. Behind the faucet, and communicating with the interior of *B*, by a fine channel, is a curved tube *m*, the object of which is to start the volatilization and gradual warming of the fluid in the tube *B*, so that it may arrive in the lamp in a gaseous condition. When the faucet *n* is turned off, the channel in *m* still communicates with *B*. The burning material, after it has passed through *e*, enters the burner proper, where it becomes mingled with air through the lateral orifice *g*, the size of which may be regulated by means of the slide *h*.

The highly inflammable character of the burning material makes it necessary to observe certain precautions:



1. The reservoir should not be entirely filled, so that when the liquid becomes warm from any cause, it will not have to find an exit by force.
2. The screw-cap of the reservoir must fit air-tight, which is best accomplished by using a washer of soft lead.
3. The preliminary warming of the fluid in *B*, by means of a special lamp (if this is preferred), must take place while the faucet is tightly closed.
4. A preliminary warming is always necessary, to cause some of the liquid to become gaseous. If too little heat has been applied, the flame of the burner is feeble, even if the faucet is wide open. After the proper degree of heat has been obtained, it is kept up by the small flame issuing from the curved tube *m*.

The above-described lamp has been constructed by, and may be obtained from, C. Lilienfein, of Stuttgart.—Abstract from *Zeitsch. f. Anal. Chem.*, 1884, 35.

Phenolphthalein is one of the most delicate indicators known for alkalimetrical or acidimetrical determinations. It should, however, be remembered that it is unsuitable in presence of ammonia or in the determinations of carbonates.

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EDITORIAL.

The Quinine Market.

THE recent developments in the quinine market have been one of the periodical surprises of the trade. After having become accustomed, for some time, to a moderately steady price of quinine, we were rather taken aback, a few weeks ago, by the announcement that the English makers had backed out of the combination which was reported as having been entered into by all the manufacturers; that they had suddenly lowered the price and had thrown large quantities of quinine on the market. This action was immediately followed by the Continental makers, so that German and Italian quinine was offered in our market at lower figures than had been known for years. Naturally, the American manufacturers had to accept the situation, though reluctantly, and reduce prices also, though several of them held back for a number of days before making their determination known. Reports have reached us of future deliveries at prices even considerably lower than the lowest cash-price paid for quinine within the last fortnight. Yet it is not improbable that the consignees of these invoices will be able to dispose of them, after their arrival, at a material advance. The sudden drop in the price naturally induced many to purchase, and the sudden tide in demand has no doubt been the cause of a slight stiffening of the market some days ago, which may be expected to continue at least until the expected shipments from Europe arrive. Possibly, the price may remain firm for some time afterwards, but as soon as those who have decided to put in a respectable stock are provided, it is not at all unlikely that the price will undergo a further reduction.

The existence of a private understanding between the manufacturers of quinine throughout the world (and we believe there are about seventeen altogether) had long been known to those who have a chance of peeping behind the scenes, and had been suspected by the public at large; yet that the combination had such a firm control over the market was known perhaps to only a few. It should be stated here, however, that the English and also the American makers deny having entered the syndicate with any binding pledges, but assert that they merely agreed to maintain the prices. According to another version, the American makers were active and pledged members of the syndicate, while the English were voluntary and unpledged.

What the continental manufacturers are going to do under the circumstances is not very clear at present. While it is well-known that they have thrown on the market a considerable quantity of stock at reduced prices, it is equally well known that they have still plenty of stock on hand. Their expectations of being able to distribute and place their stock with dealers and consumers in quantities equivalent to the expected consumption and previously-gained experience, appear to have turned out fallacious, since it appears that both dealers and consumers preferred to live from hand to mouth, which was no doubt due to a suspicion, on their part, of an impending break in the combination.

It is a serious question at present what effect the unfettered competition of the manufacturers will have upon the market in general and upon American manufacturers in particular.

That the latter are at a financial disadvantage in comparison with most European makers—at least since the duty on quinine has been removed—any one who fairly and understandingly inquires into the subject will admit. Nevertheless, the excellence of the American product, and a peculiar preference, in many sections of the country, for the home-made article, enabled our makers to obtain better value for their product than the foreign article would bring, though equally handsome and pure, and sometimes perhaps purer. And, though closely pressed by competitors, the secret combination and understanding between the manufacturers at least permitted our own makers to obtain living prices, not to mention fair profits; but, with the combination broken, it will become a serious question how far or how long it will pay our own makers to continue the manufacture, or how soon they will be crowded out.

It behooves us to look at both sides of the question, both on that of the manufacturer and on that of the consumer. While it is natural that the dear public should rejoice in being able to buy their supply of quinine at reduced rates, and chuckles over the gain it has made through the war between the manufacturers, it would nevertheless be a national calamity if the regular manufacture of quinine in this country should ever be interrupted or seriously interfered with, and we should thereby become dependent mainly upon foreign supplies. This is a question of public policy and political economy which appears to us to deserve the attention of the national Legislature perhaps more than many of the propped-up and "fostered" home industries which it is so fond of taking care of.

A Proposed New Pharmacopœia.

THE subjoined bill, to establish a pharmacopœia under the auspices of the general government is rumored to have originated in Philadelphia. Thus far, the only indorsement it has received in medical or pharmaceutical journals has appeared in the *Journal of the American Medical Association*, of Chicago, and in the *Medical News*, of Philadelphia, the periodical that obtained notoriety through its quinine-pill analyses (so-called). With these exceptions, so far as we are aware, the bill has met with little favor.

"A BILL to prepare and publish a national pharmacopœia for the United States.

"*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That the Secretary of the Treasury shall, as soon as practicable, detail two officers of the Marine Hospital service, and the Secretary of War shall detail two officers of the medical staff of the Army, and the Secretary of the Navy shall detail two officers of the medical staff of the Navy, for the duty of compiling and preparing a pharmacopœia, which shall be known as the "National Pharmacopœia of the United States of America," and shall be held and accepted as the standard for the purveying, compounding, and dispensing of drugs or medicinal agents, and shall be taken as authority in the Treasury Department on all questions arising under the tariff laws of the United States, with regard to the nomenclature, description, and purity of drugs or remedial agents, and shall further be received as evidence in the United States courts. And the matters contained in the said pharmacopœia shall be free for use by all authors and commentators, for the benefit of the medical and pharmaceutical professions and of the community at large; and it shall not be lawful for any one to reprint and publish the said pharmacopœia as a whole.

"SEC. 2. That the medical officers detailed as above provided shall invite the American Medical Association and the American Pharmaceutical Association, at their next annual meetings, to form committees of not more than three members from each of the said associations, which committees, if so appointed, may co-operate with the above-named medical officers in the preparation of the said pharmacopœia, forming a board which shall have power from time to time to add to its number as may in its judgment be necessary, and which shall elect a chairman and a secretary, and adopt such rules as it shall see fit for the expediting and perfecting of the said pharmacopœia, which, when completed, shall be printed under the supervision of the said board; and an edition of not less than five thousand copies shall be printed, for use in the several departments of the Government of the United States; and copies may be furnished to private persons, in accordance with the provisions of section thirty-eight hundred and nine of the Revised Statutes.

"SEC. 3. That for the purpose of defraying the necessary expenses of preparing the said pharmacopœia the sum of five thousand dollars is hereby appropriated out of any moneys in the Treasury not otherwise appropriated, and the same shall be disbursed under regulations to be prescribed by the Secretary of the Treasury.

"SEC. 4. That the said pharmaco

pœia shall be revised once in ten years, upon the plan embodied in this act."

The following editorial article on this subject appeared in the *New York Medical Journal* for February 23d:

"Thoughtful and right-minded men are generally supposed to agree that all government is a necessary evil, never to be amplified save as a necessity; but it seems occasionally as if a portion of the medical profession were straying away from this sound position, and, like the children of Israel of old, were pining for a king. The latest example of this tendency that has come to our notice is the movement in favor of a new pharmacopœia, in furtherance of which a bill has been introduced into Congress providing for the issue of a new pharmacopœia by the Government. It is argued that the Pharmacopœia ought to have the force of law. Now, there is a grain of truth in this broad proposition; but, for all legitimate purposes, any State can give the present pharmacopœia the force of law, and, for that matter, a court can do the same, as was lately exemplified in Massachusetts, where several manufacturing druggists were punished for furnishing pharmacopœial preparations that were not up to the pharmacopœial strength.

"It seems to us that a standard strength and a standard purity are all that the Government can legitimately enforce in the matter of drugs, but this is not all that it might assume to do if the Pharmacopœia were to be made a legal standard in the full sense of the term. In the case of most preparations, the Pharmacopœia lays down detailed processes. To make it incumbent on pharmacists to adhere slavishly to these processes, however good they may be in the present state of the art, could not but act as a clog upon the advancement of pharmacy. Even if this were not the case, we can see no good object to be gained by giving legal force to the Pharmacopœia, except in so far as may be necessary to provide against danger to the community from the administration of drugs of greater strength than the prescriber supposes, and to guard against fraud on the part of dealers in the matter of drugs of inferior strength or purity. Further than this there is no occasion to go, and further than this the Government cannot go, in our opinion.

"It is perfectly competent, of course, for the Government to assume the expense of issuing a pharmacopœia, if that is the point aimed at, but even that would be contrary to the traditions of our Government, and seems to be wholly uncalled for, as the present pharmacopœia is entirely self-supporting. It is only a little more than a year since the revision of 1880 was issued, and we understand that there is already a surplus of money in the hands of the committee, in whom the copyright is vested.

"But, not only has the book met with this material success; it has proved a *succès d'estime*, reflecting the highest credit upon the committee and upon the state of pharmaceutical science in America. Faults it has, beyond question, as we were not backward in pointing out, in a series of articles we published on it about a year ago, but for the most part they are trifling and not for a moment to be weighed against its great merits. It may be said of the revision of 1880 (what could never before be said of a United States pharmacopœia) that it has commanded the admiration of all competent critics, however critical, both at home and abroad. The present time seems, therefore, very inopportune for changing the method of constituting the body of men to whom the prosecution of the work of revision is confided. It is extremely doubtful if a committee appointed by the Government would do the work even as well as the committee of 1880 did it. The point is urged, we understand, by the supporters of the bill, that the Medical Corps of the Army, the Navy, and the Marine Hospital Service should be largely, if not wholly, charged with the work; but it should be remembered that the present method of constituting the committee gives a liberal representation to those branches of the public service. All things considered, we must express the hope, therefore, that the profession will show its appreciation of the great amount and the creditable character of the work done for it by the committee of 1880, by declining to sanction this move to supplant the method which has been found to work so well."

The above is a fair example of the criticism which the proposed act has elicited. It fails, however, to notice some objections to any immediate or radical change in standards of strength or purity, viz., that manufacturing pharmacists have but lately modified their processes and methods to correspond with the demands of the pharmacopœia of 1880, and physicians and pharmacists generally have devoted more attention, since its publication, than ever before to acquiring familiarity with official drugs and preparations. It can hardly be expected of them, therefore, that a proposition to make another change in authorities before the expiration of a reasonable period of time can receive much favor outside of the limited number of persons who are more or less directly interested in the proposed change.

It is rather remarkable, in this connection, that, when Dr. E. R. Squibb proposed, a few years since, to change the method of organizing the Convention so as to place the revision of the work, practically, under the auspices provided for in the above act, the leading opponents of the plan were Philadelphians, and that their principal effort was to show that the plan already in operation is the one to be preferred. The Convention of 1880 was called, and the subsequent revision was conducted accordingly; but the Convention adopted measures which reformed the methods of revision and removed the control of the work from Philadelphia. It becomes, therefore, of interest to inquire whether the "change of base" manifested in the "City of Brotherly Love" can have any relation to the acts of the Convention of 1880.

The New York Druggists' Union.

MUCH enthusiasm has been shown in the organization of the local union of the drug-trade, as will be appreciated from the brief account given elsewhere in this number, and it is to be hoped that much good will result, not only in the matter of profits on "patents," but, ultimately, in other matters affecting the retail trade.

Just now there seems to be a feeling that the unfortunate state of the business is owing to the competition with general stores and cutting pharmacists in goods which are not, strictly speaking, legitimate pharmaceuticals, but it is quite possible that there are too many persons in the business, and that this, rather than rate-cutting, is at the bottom of all the trouble.

ATTENTION is called in a recent number of the *Pharmaceutical Record* to the fact that about half the persons in business as retail druggists in this city have not complied with the law requiring them to be licensed by the Board of Pharmacy. We are also informed from other sources that there is some question as to whether the Board of Pharmacy is itself constituted in accordance with the law, and in a position to enforce the law in cases where interference is demanded; moreover, the question arises, whether licenses issued by the Board (if it is so illegally constituted) are of any value.

The journal above quoted also says that the provisions of the law respecting the sale of poisons are constantly violated, and instances are reported to us which confirm this statement.

Now, all of the foregoing, if true, shows a most surprising and unfortunate condition of affairs in a community where much time and money have been expended to secure a local pharmacy law, and it does not speak well for the ultimate success of the State law now before the Legislature. If the enforcement of a local law in New York is attended with such difficulty, as we are led to understand from the recent report of the Board of Pharmacy, what may we expect in the case of a State law, the administration of which must be far more troublesome?

It must be recognized that, in either case, the enactment is the result of efforts made by pharmacists themselves and is not in response to a popular demand. The burden of its enforcement must, therefore, fall upon those who indorse it. Thus far but little seems to have been done in this direction by pharmacists, and next to nothing by the public generally. It cannot be surprising, in view of the present want of interest on the part of the promoters of the law, that its provisions should be disregarded.

We will suggest that the Board of Pharmacy should publish, annually, on or about the 1st of June a corrected list of all pharmacists and assistants who are duly registered, including, also, their places of business. This publication should also give the text of all laws affecting the sale of drugs in this locality, and should be sent to every pharmacist, to the editor of the *Medical Register*, and to the Medical Society of the County of New York. This list should not only be arranged alphabetically, but also according to location, in the manner of the "Street List" of physicians in the *Medical Register*. In this way the influence of the medical profession might be secured in aid of the proper enforcement of the law.

Coalition of Drug Journals.

The Independent Record, a weekly paper which has lately taken the place of the "*Independent Oil and Drug Journal and Paint Review*," is authority for a statement that the recent coalition of drug journals is due to the efforts of the Standard Oil Company. This corporation, so it appears, has bought up the interests in "*The Drug, Oil, and Paint Trade*," "*New York Drug Bulletin*," "*New York Druggists' Price Current*," "*Soap-Maker's Journal*," "*The Oil and Paint Review*," "*The American Pharmacist*," "*The Weekly Drug News*," and "*The Druggists Circular and Chemical Gazette*;" these various publications having been merged into the "*Oil, Paint, and Drug Reporter*," the "*Weekly Drug News*," and the "*Druggists Circular*." It is not unlikely that this process of condensation will shortly result in a single journal controlled by the Standard Oil Company. Whether this corporation meditates a course of operations in drugs and chemicals similar to that which it is said to have pursued in the oil trade, we have no means for knowing, and time alone can prove, but it must certainly be in the interests of the entire drug trade to give their support to journals which are independent of the control of a powerful monopoly, rather than to such as may be used to further the interests of one or more corporations instead of the welfare of the trade generally.

Gelatin Suppositories.

EXPERIENCE has shown that no one formula can be considered as universally suitable for making gelatin suppositories because samples of gelatin vary in their melting points and consequently cause much variation in masses made therefrom. Individual experiment is therefore required to obtain a basis having a melting-point of from 90° to 95° F. As a guide it may be taken that two parts of gelatin, four of water, and seven of glycerin (all by weight) will give a basis very near the desired standard, and it may be brought to the exact point by the addition of soaked gelatin (when too soft) or of glycerin and water in the above proportions (when too hard). The melting point may be ascertained by dropping a piece of the basis into water heated to the desired degree in which it should melt within five minutes. The proportions of glycerin and water which we give are calculated to avoid smarting from superabundance of glycerin and shrinking (from deficiency thereof). The suppositories are made in the ordinary way, the moulds being slightly oiled. The weighed quantity of the mass is melted by a gentle heat, the medicament in fine powder gradually added, and when such is soluble the gentle heat should be continued until solution is effected, the effect of any loss of water being counteracted by the facts that salines lower the melting-point of the basis.

It matters little what gelatin is used provided the proportion required is always ascertained. Russian gelatin suits very well, and is cheaper than Cox's or Nelson's, but *for any kind*, fresh stock should always be experimented with before the proportion, as used of old stock is adopted. The gelatin should be soaked in the water over night, the glycerin then added, and solution effected by the heat of the water-bath.—*Chem. and Drug. Diary.*

Vanillism.

DRS. LAYET and ARNOZAN have communicated to the French Association for the Advancement of Science the results of their researches on the physical qualities, the effects and the parasites of vanilla. They cited several cases of poisoning by eating of vanilla ice-cream. It was at first supposed to be due to the formation of lactate of tin in the vessels, but cases of poisoning followed the use of the same stock of vanilla in the hands of a confectioner in another city, who had purchased it. There were other cases in Berlin.

The symptoms simulated cholera, continued vomiting, diarrhœa, epigastric paid, cramps in legs, face and extremities cold and purple. The symptoms ensued in about two hours after eating, and recovery in three or four hours.

Among operatives, those who cut the vanilla into small pieces are troubled with papular eruptions of the face and hands, with local heat and swelling, irritation of the eye and lids, and oftentimes patches of redness and desquamation.—*Boston Medical and Surgical Journal.*

Thready Orange Flower and Other Waters.

IN one of his practical papers in the *Journal de Pharmacie et de Chemie*, Mr. P. Carles describes a simple means of clearing off the parasitic threads which so readily form in many of the distilled waters, such as orange and elder flower and some rose water, rendering them often viscous, albuminous and useless. The susceptibility to this impregnation is in direct relation to the quality of the water. Some writers, says Mr. Carles, have proposed the addition of tannin to the waters; but that, he says, changes their flavor and odor, and even then it does not succeed. Others, more thorough, recommend a redistillation with needs a tedious operation even if one has a still, and which, after all, leaves the most valuable portion of the product in the apparatus. The most usual treatment of waters which have become so affected is to throw them into the gutter. Acids and salts of lead, copper, or silver Mr. Carles has found will kill the parasites, but there are objections to the use of these, and the best method, he states, is to make a few grammes of the subnitrate of bismuth into a milk, and shake it for a minute or two with the affected water. This does not injure the properties of the water in the least. Two or three grammes of salt are sufficient for a litre of the water, but it is better to use rather more, and the salt may be used repeatedly if it be slightly calcined after recovery. The water thus treated will clarify itself in a few hours and, in ordinary conditions, is not liable to re-invasion of the parasites.—*Chem. and Drugg.*

Croton Oil Blisters.

G. GUÉRIN reports that he has for some time past prepared very active blisters from croton oil for the service of Prof. Mayet in the hospital at Antiquaille.

The vesicating portion of croton oil, the so-called crotonol, is easily extracted from the oil by shaking together, in a bottle, equal parts of croton oil and alcohol of ninety per cent, and setting aside until two layers are formed. The alcoholic layer contains the crotonol. This is separated and exposed in a capsule until the alcohol has evaporated.

The resulting residue is somewhat more viscid than the original oil, and very highly active.

To prepare blisters, pieces of silk of suitable size are cut, and fastened by the hand upon diachylon plaster, and enough crotonol is applied to the silk to thoroughly saturate it.

The results are reported to have been "absolutely satisfactory."—*Bull. de Pharm. de Lyon.*

Oil of Birch.

OLEUM RUSCI, according to Mr. Peter Acewan, is nothing more or less than oil of birch, and derived from the *Betula alba*, or white birch. Its use has chiefly been in the manufacture of Russia leather, to which it imparts the characteristic odor. It is chiefly made in Russia and Poland by dry distillation of the bark, twigs, and rootlets. It is a thick, reddish-brown or brownish-black liquid, sparingly soluble in water, but to a great extent in alcohol and ether, the specific gravity of the redistilled oil being 0.800 to 0.987.

Birch-bark by moderate heating gives off a camphoraceous body called betulin ($C_{30}H_{50}O_3$), which may also be extracted by means of alcohol, and which, although without odor or taste at ordinary temperature, gives off the odor of Russia leather when heated to 258° C.

Among Russian peasants the oil is highly esteemed as a domestic panacea, and by physicians in Russia and Germany is used in skin diseases.

In a paper on this subject in the *Pharmaceutical Journal*, Mr. Macewen speaks of several articles resembling oil of birch which have been substituted for it commercially, which very likely accounts for the failure of English dermatologists to derive the expected effects from its use.

Pungency of Tincture of Iodine and of iodine liniment is said by W. H. Darling to be due to acetone developed when methylated alcohol or wood-spirit is used.

Water-Cress in Therapeutics.

GRELLETY (*Gazette Hebdomadaire de Médecine et de Chirurgie*) claims that the water-cress is not as wholesome as is generally supposed, and, as it contains a nitrogenous essential oil, with allyl for its base, together with a bitter extractive, iodine, iron, and phosphorus, it might be regarded as an irritant. Dujardin Beaumetz regards it as of value in diabetes and eczema, but the French officinal syrup was a bad preparation, having a disagreeable sulphurous odor. Gueneau de Mussy recommends the fresh juice, squeezed out by a press, combined with a little syrup of orange peel. It was the general opinion of the French Therapeutical Society that, when old and of rank growth, water-cress might act as a stomach irritant, but the young plant is free from such properties.

"Vanado-Sulphuric Acid" as a Reagent for Alkaloids and Particularly for Strychnine.

K. F. MANDELIN has found that a peculiar compound, obtained by him from vanadium, is a most delicate reagent for alkaloids in general, and particularly for strychnine, inasmuch as the peculiar color reaction obtained with the latter differs from all other strychnine reactions so far known.

The reagent is prepared by dissolving one part of vanadate of ammonium in 100 parts of strong sulphuric acid. It is called, by the author, for short, Vanado-sulphuric acid ("Vanadin-Schwefelsäure"), though this name, strictly speaking, would belong to a compound acid.

If strychnine be treated with a few drops of this reagent (even when diluted with an equal quantity of strong sulphuric acid), upon a watch-glass, on inclining the latter so as to let the acid flow on one side, the residue will assume almost instantly a magnificent blue color, which soon passes into violet, afterwards into vermilion, red, or orange. On adding to the acid, after the vermilion tint has made its appearance, a little soda or potassa, a quite persistent rose-red to purple color is obtained, which is rendered still more handsome by dilution with water. The same color appears even with simple addition of water, and the liquid afterwards bears dilution with water without losing its tint.

If the quantity of alkaloid is small, the test is best performed in the following manner: The alkaloid, or the residue obtained in any manner from substances suspected to contain an alkaloid, is put on a watch-glass, covered with a few drops of the reagent, and kept so (for a few moments) until the solid matter appears to assume a bluish tint or begins to acquire color. Then the watch-glass is inclined to one side so that the liquid portion may flow off the solid residue. If there was any strychnine present, the handsome blue color is most vivid at the moment when the acid uncovers the residue. With quantities as small as $\frac{1}{100}$ milligramme of strychnine, the color was still quite pronounced, much more so than the color obtained with other reagents for strychnine.—Extract from the author's pamphlet "Ueber Vanadinschwefelsäure." 8vo. St. Petersburg, 1883.

Santonin is recommended by Dr. U. Anderson in the *Lancet* as a remedy for gleet. Having employed it to secure the destruction of intestinal worms, the patient remarked that the remedy had not only killed the worms, but also cured a long-standing gleet. Dr. A. advises its use in doses of five grains, triturated with an equal amount of sugar of milk, to be taken twice daily in milk, fasting.—*Pharm. Jour.*

Effects of Cotoin and Paracotoin.

THE *Lancet* (Oct. 20th, p. 704) gives a summary of some recent investigations of Albertoni on cotoin and paracotoin, which were published in the *Archiv für exp. Path. und Pharm.* (Sept., 1883). Albertoni finds that repeated small doses of cotoin increase the appetite of healthy men without causing unpleasant sensations and without producing constipation. It does not become dissolved in the gastric juice, but passes unchanged in the intestines, where it would appear to be absorbed, as it is excreted by the urine. The falling off in the amount of indican in the urine during the use is supposed to be due to a secondary effect, which depends on the cure of the internal lesion. The experiments made show that cotoin can determine an active dilatation of the vessels of the abdomen, an action not known to be possessed of any other substance. Paracotoin is weaker than cotoin in its physiological action. Albertoni considers that cotoin is of value in the diarrhœa met with in the various forms of mental disease, in chronic intestinal catarrh, in looseness of cachectic states, and in the relaxation of pellegra, phthisis, and rickets. Its use is contraindicated in states of severe hyperæmia of the intestines, and where a tendency to melæna exists. Doses of 15 and 20 centigrammes per day were thought to be more effectual than smaller ones. The administration of bismuth with cotoin is suggested as likely to be of special value.—*Pharm. Journal.*

Melting Point Determinations.

IN the course of an elaborate paper on the Use of Mercury Thermometers, by J. M. Crafts, the author makes the following remarks which will be found of interest.

When a sufficient quantity of a substance can be disposed of, it is best to introduce a small and sensitive thermometer into the liquid, and to observe all the changes of temperature during the complete solidification. It is usual to take melting points of small quantity of matter in a capillary tube attached to a thermometer, and both are heated in a sulphuric acid bath or in a paraffin bath,* for temperatures higher than 300°. It is only necessary to remark upon a modification of this process in which the apparatus contains an interior tube which is used as an air bath, surrounded by sulphuric acid. This form of apparatus was devised to prevent the sulphuric acid from escaping into the air, and to prevent the sulphuric acid from attracting moisture. These ends could be obtained more simply otherwise, and the apparatus has a grave defect. It is only necessary to heat a large and a small thermometer together in an air-bath at changing temperatures to see that one is constantly behind the other in its indications, and it is quite certain that a small mass of substance in a capillary tube would be usually heated more quickly than a thermometer placed beside it, when they are both heated in an air-bath at rising temperatures. It is therefore indispensable in melting-point determinations to heat the thermometer and the capillary tube together in a liquid, and not in any form of air-bath. The numerous forms of apparatus proposed for observing points of fusion have often been applied with good results to special cases, but the ordinary method is on the whole the most convenient, and few substances are known of sufficient purity to demand a process of greater accuracy. The method which is most nearly perfect is that which is always used with melting ice, and it would be interesting to heat such other solids as can be obtained pure in sufficient quantities in an air-bath at a temperature somewhat higher than their melting-points and to observe the degree of constancy attained by a thermometer properly surrounded by the melting solid.—*Am. Chem. Journal.*

* It is not difficult to find English paraffin candles which are so well purified that after distilling a small portion of the more volatile hydrocarbons it enters into active boiling above 370°.

Caffeine besides Theobromine in Cacao.

WHILE engaged in the operation of preparing theobromine from cacao beans, Herr Schmidt has observed (*Archiv* [3], xxi., 675) the separation from the last mother liquor of a small quantity of long acicular crystals, corresponding in appearance and behavior with caffeine, which was obtained pure by dissolving in cold benzol and recrystallizing the evaporation residue from hot water. The occurrence of a second crystalline alkaloid, "existing in larger quantities in some descriptions of cacao than in others, and in larger proportion in the husk than in the kernel," had been previously recorded by Mr. Bell (*Analysis and Adulterants of Foods*, p. 85), who, however, only speaks of it as a "theine-like alkaloid," containing 25.48 per cent of nitrogen (anhydrous caffeine contains 28.86, and with one molecule of water, 26.41 per cent). Herr Schmidt, however, found the alkaloid to be identical with caffeine, and the gold salts to correspond exactly in appearance and in composition. The two alkaloids may be separated by taking advantage of their different solubility in cold benzol.—*Arch. d. Pharm.* and *Pharm. Journ.*

Adulteration of Black Pepper.

GEO. C. HALL, Ph.C., of Kalamazoo, Mich., reports an examination of twenty-five samples of so-called black pepper collected from grocers and druggists in Kalamazoo and Ann Arbor, five being from druggists, and of these three were pure, one contained wheat starch, and the other both wheat and buck-wheat starches. Only two of the twenty samples got from grocers were pure, the remainder were adulterated with wheat, buck-wheat, and bean starches in various proportions, and in the order mentioned. In the druggists' samples the adulteration were five and ten per cent, while in the grocers' samples the percentage was from five to sixty.—*Contrib. from the Chem. Lab. of the Univ. of Mich.*

The Determination of Nitrites by Permanganate.

LEONARD P. KINNICUT and JOHN U. NEF have re-examined the process of assaying nitrite of sodium and nitrite of potassium by means of solution of potassium permanganate of known strength.

When carried out even with care, the results were found to be uniformly short of the required figure by about 16 or 15.5 per cent, but among the different results obtained there is a remarkable uniformity.

The same uncertainty, according to the authors, attaches to the estimation of sulphites by means of permanganate.—From *Am. Chem. Journ.*

[Note by ED. A. D.—The U. S. Ph. has adopted the permanganate process for the assay of spirit of nitrous ether. It is well known that the nitrite of potassium obtained as a step of this process is usually contaminated (or, at least, likely to be so) with other substances which likewise reduce the permanganate. And even if no other substances were present, the results of the two authors mentioned above would show that no reliable data can be obtained by this test. It seems to us that the only safe method is to estimate the nitrogen as gas, and a good method for this, easy of execution, is still a desideratum.]

NOSTRUMS.

[*The following formulas are copied from various sources, and published without editorial guarantee as to their reliability.*]

Thomas' Electric Oil. (L. L. Briggs, New Hampton, Ia., in *New Idea.*)

Gum of camphor	½
Oil of gaultheria	½
Oil of origanum	½
Chloroform	1
Laudanum	1
Oil of sassafras	1
Oil of hemlock	1
Oil of turpentine	1
Balsam fir	1
Tincture of guaiacum	1
Tincture of catechu	1
Alcohol	04

Alkanet sufficient to color.

Mexican Mustang Liniment. (*St. Louis Druggist.*)

Linseed oil	4 parts.
Turpentine	4 "
Barbadoes tar	1 part.
Crude petroleum	1 "

Morfit's Hair Tonic. (*Weekly Drug News*).

One-half ounce of vinegar of cantharides is mixed with one ounce each of cologne and rose water; or one-half ounce tincture of cantharides is mixed with two ounces of cologne water, one-half drachm oil of nutmeg, and ten drops of oil of lavender. If too strong, dilute with cologne water.

Nepenthe, according to a correspondent of the *Chemist and Druggist*, yields .07 gramme of morphine to the fluid ounce, and he gives the probable formula as:

Tartrate of morphine	gr. iij.
Sulphate of morphine	gr. i.
Sherry	℥i.

On subsequent consideration, however, it was concluded that the sulphate alone was employed, a frequent deposit of calcium sulphate resulting from the reaction between the sulphate of morphine and calcium tartrate contained in the sherry.

Himrod's Asthma Cure. (J. S. Hearn, Pine Bluff, Ark., in *Druggists Circular.*)

"I bought the receipt in Denver, Col., in 1875. It was used extensively there, and said to be the original. It is as follows:

Powdered lobelia	2 ounces.
" stramonium leaves	2 "
Powdered nitrate of potash	2 "
Powdered black tea	2 "

Mix, and sift well."

Kings' Great Discovery." (Stearns' *New Idea.*)

The following is said to embody the essential elements of this nostrum, and give a mixture which is equally serviceable.

Tar (pine tree)	60 gr.
Powdered sugar	960 "

Mix intimately by trituration in a mortar, and add gradually a mixture of six fluid drachms each of alcohol and water; then add enough "Golden Drop" syrup (*i. e.*, glucose and cane-sugar syrup) to make five and one-half fluid ounces, having previously placed into the bottle:

Oil of anise	2 gr.
Chloroform	60 "
Fl. ex. wild cherry	96 "
Fl. ex. ipecac	48 "

Mix, and strain after allowing it to stand for several hours.

QUERIES & ANSWERS.

Queries for which answers are desired, must be received by the 5th of the month, and must in every case be accompanied by the name and address of the writer. Unless special instructions to the contrary accompany the query, the initials of the correspondent will be quoted at the head of each answer.

When asking for information respecting an unusual or proprietary compound, always accompany the query with all the information you may possess respecting it, and, when it can conveniently be done, send a specimen of the label.

No. 1,235.—**Kairine** (P. A.).

The name *kairine* has been given by Dr. Otto Fischer and Wilh. Königs to a synthetic compound, the proper chemical name of which is "oxy-quinoline-methyl-hydride" (see NEW REM., 1883, 41). The name kairine was chosen to facilitate its practical application, since it was found to be a valuable medicinal agent for reducing febrile temperatures. Besides this body, an allied compound, namely, the "quinoline-methyl-hydride," was also found to have similar properties, and for this the name *kairoline* was chosen.

On the therapeutic uses, etc., of kairine, compare NEW REM., 1883, pp. 41, 118, 174, 236, 242, 267, 343.

The first reports regarding this remedy were exceedingly laudatory, but, as it will generally happen with a new and highly-praised drug, unfavorable reports shortly afterwards made their appearance, which greatly retarded its introduction and further study. The period of its probation, however, seems now to have been passed, since a decided reaction in its favor has set in among competent medical practitioners who are wont to observe closely and critically, and who are not likely to be won by the mere novelty of a thing.

When the discoverer of the new compound desired to place it on the market, it was at once found that it could be made to advantage and at a reasonable price only in works where quinoline was manufactured on the large scale, and where the operations of substituting methyl, ethyl, and other radicals in organic compounds were carried on as a regular branch of business. Such establishments are the large factories of aniline colors, and it was one, the largest of these, namely, the firm of Meister, Lucius & Brüning, of Hoechst on the Main, which undertook the manufacture.

At first only very small quantities, and those of a rather inferior look, could be turned out, owing to the great trouble and difficulty of the process, it being found particularly difficult—as we have been given to understand—to properly methylate the quinoline. After a while, however, it was ascertained that, by substituting *ethyl* instead of methyl the process was greatly facilitated, while the product had the same properties as that made before. Hence the preparation of the *methyl kairine* was abandoned (or nearly so), and the *ethyl kairine* worked out as a product. The same kind of experience was made with *kairoline*, which is now made to contain ethyl instead of methyl, and is therefore identical with the "quinoline-ethyl-hydride" discovered some time previous to Fischer and König's researches by Wischnegradsky.

There are, therefore, really three different preparations to be distinguished:

1. *Ethyl kairine*, distinguished by the manufacturers as "*Kairin E.*" (so on the label, or the label is merely "Kairin.") This is the compound generally supplied when simply "*Kairine*" is asked for. Indeed, it is probably at present the only kind to be had in this market. If this is given in doses of 20 to 30 grains, the temperature is lowered for some six hours. According to Dr. T. A. McBride, it is best given in 3½-grain doses, every hour or half-hour until the temperature is reduced to 101°; as soon as this gives the slightest indication of again rising (which must be watched carefully) another dose of 3½ or 7 grains is again to be given, and continued if necessary.

1. *Methyl kairine*, distingushed by the manufacturers as "*Kairin M.*" This is the substance at first made and supplied. The dose of this is 0.5 to 1 gramme (7½ to 15 grains). The temperature is rapidly lowered by it, but rises again rapidly.

3. *Ethyl kairoline*, distinguished by the manufacturers as "*Kairoline E.*" We believe there is no methyl kairoline made now. Kairoline E. is said to act like Kairine E.

For further information regarding the proper method of administering kairine and its sphere of application, you should consult a paper on "Kairine in Typhoid Fever and Albuminuria in Intestinal Hæmorrhage," by Dr. Thomas A. McBride, of New York, in the *Medical Record* of December 15th.

No. 1,236.—**Exhausting Buckthorn Berries** (F. H.).

This correspondent asks, "What is the most suitable menstruum for exhausting buckthorn berries? I have been using diluted alcohol, but a very copious deposit occurs after the fluid extract is made but a few days, almost as heavy, in fact, as frequently occurs with the parsley. Perhaps more alcohol would produce better results."

One cause of the precipitate in the fluid extract made with diluted alcohol is no doubt the grape-sugar extracted during the process, which gradually separates on standing. To increase the amount of alcohol in the menstruum would probably result in a smaller proportion of this sugar being extracted. The active principle discovered by Winkler in the juice of the berries, namely rhamnocathartin, is soluble both in alcohol and in water; hence it seems plausible that a fluid extract made with a stronger alcohol will contain this principle and be at the same time less liable to form a precipitate. If a *syrup* of buckthorn berries will answer the same purpose, this is best made by allowing the expressed and strained juice of the crushed berries to undergo a slight fermentation, so as to destroy the pectin-bodies. Then five parts of the fermented juice are made into syrup with nine parts of sugar.

The fermentation of a fruit-juice like that of buckthorn berries, cherries, etc., is best performed in the following manner, according to Hager:

The crushed or mashed fruit is mixed with two per cent of sugar and exposed for three or four days in a suitable vessel to a uniform temperature of 20° to 25° C., being stirred up several times each day. As soon as no more fermentation is visible, and a sample of the juice is found to run easily through a filter, and when 5cc. of the filtered juice, mixed with 10cc. of alcohol, yield a clear liquid, the whole mass is strained, expressed, and filtered.

If only small quantities of fluid are to be fermented at a time, it is best to do this in a cask, since all extraneous matters are thereby excluded and the end of the fermentation can be exactly determined. For this purpose, a suitable cask is placed end up, and a hole two and three-quarters inches in diameter, bored in the upper bottom. Into this is placed a wooden bung, packed with rubber at the edge, and into the bung is bored another hole, carrying a rubber-stopper and a glass-tube bent twice at right angles, the outer leg of which dips into a bottle of water standing on the cask. The cask having been filled to two-thirds or three-fourths of its height with the fruit-pulp or juice (mixed with two per cent of sugar and kept at a temperature of 20° to 25° C.), the bung is inserted and the fermentation is allowed to proceed. As a consequence, there will be carbonic acid gas given off, which will bubble through the water into which the glass-tube dips. When no more gas bubbles are perceived the fermentation is concluded.

The properly fermented juice should be transferred to a cool place for about two days, then decanted and filtered—care being taken that the fine sediment be not transferred to the filter, as it would clog the latter. The filtering-paper must be of loose texture, and must be well wetted before use. [In our experience, care should be taken not to let the filter-paper rest upon the sides of the funnel. It should be plaited, the sides of the funnel should be lined with a moderately thick layer of clean tow, the plaited filter put in and then wetted. If this is done, it will let the liquid pass continuously at a very fair rate.] If the filtration is difficult, Marquardt recommends to add a little skimmed milk and to shake thoroughly. The acid present in the juice coagulates the casein, which thereby envelops suspended matters and clarifies the liquid. Or paper-pulp, that is, filtering-paper cut and pounded with water, may be used for this purpose.

No. 1,237.—**Automatic Water Still.**

Numerous correspondents have inquired the address of the maker of the automatic water still described in our January number. It is W. H. Herrick, Elizabethtown, New York.

No. 1,238.—**Pasting Labels on Tin.** (J. H. S. Galway, New York).

Make a paste by soaking gum tragacanth in water enough to cover it, leaving abundance of room in the bottle for the gum to swell, which it will do to a surprising degree, stir it to break up lumps and while doing so add a few drops of carbolic acid or oil of cloves to prevent it becoming rancid.

Apply to the labels with an ordinary bristle paste-brush and you will have no trouble in securing good adhesion of the labels to the tin.

No. 1,239.—**Hippurate of Sodium** (Dr. F. A. P.).

This salt has lately been recommended for the purpose of aiding the elimination, from the system, of an excess of uric acid. According to Dr. Garrod, the addition of hippurate of sodium to a blood serum which shows the presence of a urate soon removes the latter from it.

Peter Boa, in a paper read before the North British Branch of the Pharm. Society, on December 19th, stated that this new salt would be likely to be prescribed only in powder or in mixture.

When prescribed in powder, it may be dispensed in paper, as it keeps well.

If wanted in mixture, it is somewhat difficult to disguise its saline taste. The most agreeable combinations which the author could devise were obtained by means of syrup and peppermint water, or glycerin and cinnamon water. The following combinations are quoted as examples:

1. Sodii Hippuratis.....gr. 80
   Lithii Carbonatis.....gr. 24
   Glycerini.....f℥4
   Aquæ Cinnamomi, ad..f℥8
   Dose: 1 fluid ounce.
2. Sodii Hippuratis.....℥2
   Potassii Citratis.....℥3
   Syrupi.....f℥6
   Aquæ Menthæ Pip., ad f℥6
   Dose: A tablespoonful.

According to Mr. Boa, the addition of an alkaline carbonate or citrate, as given in the above formulæ, is desirable, so as to imitate the condition of

the renal excretion of the herbivora, which is alkaline, that of man being usually acid.

No. 1,240.—**Iodide of Lead** (Mr. H. C.).

C. H. Maisch points out (in *Am. Jour. Pharm.*, Feb., 1884) that the test given under *Plumbi Iodidum*, in the U. S. Ph., 1880—to rub 1 part of the salt with 2 parts of chloride of ammonium and 2 parts of water, whereupon a colorless liquid should result—is not worded correctly. The test should read as follows:

"On triturating 1 part of the salt (lead iodide) with 2 parts of chloride of ammonium in a porcelain mortar, and adding 2 parts of water, the mixture should soon change to a white color, and, when heated, should dissolve without residue."

The original draft of the test, while in manuscript, read: "On triturating 1 part of the salt with 2 parts of chloride of ammonium in a porcelain mortar, and adding 2 parts of *boiling* water, a colorless liquid should result." The word "boiling" was accidentally left out; but, even then, the test will not always work well, since the cold mortar will chill off the boiling water sufficiently to prevent its dissolving the salts completely.

It will be preferable to word the test as Mr. Maisch suggests.

No. 1,241.—**Effervescent Citrate of Iron** (E. J. M. & Co.).

We have had no personal experience in making this preparation; but, from the authorities at our command, we select the following three formulæ, which are said to produce satisfactory products:

1. Dried Sulphate of Iron 5 parts
   Bicarbonate of Sodium 30 "
   Carbonate of Magnesium ..... 20 "
   Citric Acid ..... 20 "
   Tartaric Acid ..... 20 "

Mix them intimately, and heat the mixture on a water-bath, under constant stirring, until it forms a granular mass which is to be passed through a sieve.

2. Pyrophosphate of Iron (U. S., 1880) ..... 50 parts
   Bicarbonate of Sodium 80 "
   Citric Acid ..... 30 "
   Tartaric Acid ..... 35 "
   Carbonate of Magnesium ..... 5 "

Mix the iron salt with 20 parts of bicarbonate of sodium, moisten the mixture with a very small quantity of water, dry it in a lukewarm place, and reduce it to powder. Then mix it with the remainder of the bicarbonate of sodium and the other substances, moisten it with a little alcohol, and granulate it in the usual manner.

(Both of the above after Hager.)

	Parts.
3. Pyrophosphate of Iron	30
Bicarbonate of Sodium	130
Tartaric Acid	100
Sugar	50

Mix the iron salt with 30 parts of bicarbonate of sodium, moisten the mixture with a little alcohol, dry it at a gentle heat, and powder it. Then add the remainder of the bicarbonate of sodium and the other substances, moisten with a little alcohol, and granulate in the usual manner. (E. Schmidt.)

No. 1,242.—**Text-Book on Practical Pharmacy** (J. H.).

Parrish's treatise, a new edition of which, edited by Wiegand and published in Philadelphia, is the best work for your purpose. It costs $5.00 in muslin, and $6.00 in leather, which is better for a work apt to be used so much, and can be had through any bookseller.

No. 1,243.—**Cement for Pestle Handles** (H. D. K.).

A commonly used cement for this purpose is a mixture of resin and wax, varying in proportions from about six parts of the former and two parts of the latter. A much more durable cement, however, may be made by means of glue, to which a little tannic acid has been added. The best way of proceeding is as follows:

Clean the inside of the pestle and the end of the handle thoroughly. Then fill the hollow handle *full* of water, hold it over an empty dish, and insert the handle so as to fit the pestle nicely. The displaced water which is caught in the capsule indicates the volume to be occupied by the cement. The object is to be able to adjust the proportion of tannin to the amount of glue used. Now heat the pestle in hot water, take it out and drain it, and, while it is still hot, pour into it twice as much hot, melted glue, as the volume previously ascertained requires. For every fluid-ounce of hot glue add two fluid drachms of glycerite of tannic acid (one in two) which may be made a little more fluid by adding some drops of hot water. Quickly stir the mixture with a stiff stirrer, and then immediately insert the handle, made moist and warm with hot water. Press it in tightly, wipe off the excess of the glue-mixture, and set the pestle aside for some days, or longer, if possible, handle down, so that it may become firmly united.

A mixture of resin, asphalt, and wax, about three parts each of the former and one of the latter, though other proportions may answer equally well, has also been recommended for the same purpose. We have used it years ago with good success.

No. 1,244.—**Pharmacy Boards in Australia** (C. H. N.).

The name and address of the Secretary of the Pharmacy Board for Victoria is Mr. Harry Shillinglaw, Mutual Providence Buildings, Collins street, West, Melbourne, Australia.

This gentleman will be able to reply more fully and correctly to your questions than we would be able to do.

No. 1,245.—**To Cover the Odor of Tar** (L. Z.).

Various aromatic substances may be used to disguise the odor of tar, but most of them will lose their aroma before the odor of the tar has disappeared. Any of the more powerful essential oils, which are not of themselves disagreeable, may be added to the tar in sufficient quantity. Probably the best agent is the artificial oil of bitter almonds—oil of mirbane or nitrobenzol—which is more penetrating and persistent than any other. The odor of tonka, imparted by means of cumarin, may also be found agreeable.

No. 1,246.—**Syrup of Senega.**

One of our subscribers directs attention to the formula for making syrup of senega of the U. S. Ph. of 1880. The directions require that 160 parts of fluid extract of senega be mixed with 250 parts of water, and afterwards with 4 parts of water of ammonia, making altogether 414 parts. The mixture is to be set aside for a few hours, then to be filtered through paper, and enough water to be passed through the filter to make the filtrate weigh 400 parts.

Our correspondent says: "Unless there is considerable loss by filtration, the product will weigh about 410 parts."

We had noticed this point before, and think it would have been better to lower the amount of water to 235 parts. Nevertheless, we have not noticed that the excess over 400 amounted to as much as 10 parts, there being usually enough matter retained by the filter to make the product about 400. At all events, it will be but seldom necessary to wash the filter with water so as to obtain the quantity directed by the Pharmacopœia.

No. 1,247.—**Beef-Tea** (U. S.).

The proper way to make beef-tea is, of course, to start from fresh beef, and boil this, if possible, under pressure, so as to extract all the soluble constituents. As our correspondent is in a position where he is for a good portion of the year remote from sources of supply, and, though having plenty of canned meats, yet cannot obtain fresh beef directly from the butcher, he desires us to give him a formula for making beef-tea from the extract.

Now, the commercial extract of beef does not contain all the constituents of beef; neither does beef-tea made from fresh beef. Yet the latter contains a good deal more of them than that made from the extract. Extract of beef would not keep at all if the albuminoids, fat, and gelatin had not been almost entirely removed. The extract is, therefore, not so much a nourishing as a stimulating substance, and, if it were the only food administered or taken, it would not be able to sustain life.

It will not be necessary, under ordinary circumstances, to combine the extract of beef with enough of the three previously removed ingredients to restore the original proportion of the latter. As a rule, it will be more convenient, as well as acceptable to the patient, to receive the missing constituents in some other form.

As a basis for good beef tea, in which gelatin is introduced more as a culinary than as a physiological addition, the following formula may be used:

Extract of beef ..... 1 to 1½ oz.
Gelatin shreds ..... 1 "
Salt,
Pepper,
Lemon peel, fresh, each, according to taste.
Water, enough to make ½ gallon.

Soak the gelatin in about one pint of cold water; when soft, add it to the remainder of the water, and heat to boiling. Then add the extract of beef, dissolve it by stirring, remove the heat, and add the spices.

The cost of this beef-tea, calculated on the basis of three ounces of extract of beef to the gallon, amounts to about forty-five cents.

No. 1,248.—**Colors for Show-Bottles.**

This is one of the standing and ever-recurring queries received by us and our editorial confrères. We will answer it here, and shall refer future inquirers to this number.

In preparing colored solutions for show-bottles, enough should be made at one time to fill the globe completely, and to have some surplus with which to refill the globe from time to time. Mere addition of water to a colored solution which has lost some water by evaporation, often impairs the depth of color and brilliancy. Each solution should be filtered very carefully so as to be perfectly clear. If possible, the stock should be made in winter, and enough alcohol (or glycerin) added to each to prevent the solution from freezing at any low temperature likely to affect the globe. From 2 to 3 pints of alcohol are usually required for each gallon of liquid.

Aniline colors of different hues may be used, though they are more or less fugitive, and have to be more frequently renewed than others. A very faint fluorescent solution, with a magnificent greenish-yellow fluorescence by reflected, and a reddish tint by transmitted light, is produced by adding a few grains of fluoresceine to water containing a little ammonia. The mistake is frequently made of having the colors too deep. Pale tints

are as a rule more brilliant than the deeper ones.

Blue.—1. Dissolve 4 oz. of sulphate of copper in 2 pints of water containing 1 oz. of sulphuric acid, and filter.

2. Dissolve Prussion blue in hydrochloric, or in solution of oxalic acid; add water until the proper shade is produced, and filter.

3. Dissolve ½ oz. sulphate of copper in 4 pints of water, and add to it enough water of ammonia to redissolve the precipitate first formed. Then dilute more, if desired. This is not very stable.

Violet.—Dissolve 1 oz. of nitrate of cobalt in 2 quarts of a saturated solution of carbonate of ammonium. After thorough shaking, add enough ammonio-sulphate of copper to produce the proper tint. Filter.

Red.—1. Dissolve carmine in water of ammonia and dilute with water to the desired shade. About ½ drachm of carmine will be required for 1 quart.

2. Dissolve 1 drachm of carbonate of cobalt in hydrochloric acid, add enough carbonate of ammonium to dissolve the precipitate first formed, and dilute to the proper volume.

3. Add a little sulphocyanide of ammonium or potassium to a very dilute solution of a ferric salt.

Green.—1. Dissolve 4 oz. of sulphate of copper in 2 pints of water, then add sufficient bichromate of potassium to render the liquid green (about 5 drachms).

2. Dissolve 1 oz. of metallic nickel in nitric acid diluted with twice its weight of water, then add water to make 1 gallon, and filter.

3. Dissolve copper in nitromuriatic acid, and dilute to the proper volume.

4. Dissolve 4 oz. of sulphate of copper and 8 oz. of chloride of sodium in 2 pints of water, and filter.

5. Dissolve ½ oz. of subacetate of copper in 2 oz. of acetic acid, and dilute with water. A little ammonia may be added.

6. Dissolve 4 oz. of sulphate of copper in 2 pints of water, and add 6 oz. of nitric acid. This looks bluish-green by reflected or daylight, and fine green by transmitted light. Filter through glass-wool.

Amber.—Digest 1 part of dragon's blood, in coarse powder, with 4 parts of sulphuric acid. When dissolved, dilute with pure water to the desired tint, and filter.

Orange-red.—Dissolve bichromate of potassium in water, and add, for every pound of the salt, 4 oz. of sulphuric acid. Filter through absorbent cotton.

Yellow.—1. Use a solution of picric acid in water. The acid requires 150 parts of the latter for solution at 15° C. (59° F.).

2. Dissolve chromate or bichromate of potassium in distilled water, and filter. Dilute to the desired tint.

Amethystine.—Dissolve 5 (or more) grains of salicylate of sodium in 1 gallon of water. Then add a few drops of solution of chloride of iron (enough to produce the desired tint), and add a few drops of hydrochloric acid.

No. 1,249.—**"Salts of Bark"** (J. Bros.).

Our correspondent received a number of recipes in which the term "salts of bark" occurs. He desires to know whether this has a special significance or is simply an abstract term for the numerous salts of cinchona.

We believe that the writer of the receipts meant that term to denote any single alkaloidal salt of cinchona or any desired combination of them, the formulæ being probably adapted to the use of any one or more of them. For instance, you may decide to use sulphate of quinine alone or a mixture of sulphate of quinine and sulphate of cinchonine, or a mixture of the sulphates of quinine, quinidine, cinchonine, and cinchonidine, etc., etc.

No. 1,250.—**Syrup of Dover's Powder** (O. L. H.).

There is no definite formula recognized for this preparation. If your physician insists on having such a syrup prepared, it may easily be accomplished, for instance, in the following manner:

Fluid ext. of ipecac, 128 ♏, or	1 part
Deodorized tinct. of opium, 1,500 ♏, or	10 parts
Syrup, enough to make 1 pint, or	80 "

Evaporate the deodorized tincture of opium until it measures about 300 minims (or weighs about 2 parts); then mix it with the fluid extract of ipecac and the syrup.

Each teaspoonful corresponds to 1 grain each of opium and of ipecac, and is, therefore, equivalent to 10 grains of Dover's powder.

No. 1,251.—**Liquor Carbonis Detergens** (L. Z. C.).

This is a preparation made by W. V. Wright & Co., of London (Southwark street). It is an "alcoholic solution of coal-tar, suitably diluted," to quote from the report of Dr. Jamieson. Its exact composition is unknown, but it has nevertheless been used by dermatologists in England—another instance of medical empiricism.

In the London Hospital there is used a *Liquor Bituminis Compositus* which is stated by Martindale to have similar properties to the above-mentioned nostrum.

It is prepared thus:

Coal tar	1 oz.
Boiling water	2 oz.

Shake well and add

Tincture of quillaia (1 in 5), 1 pint; agitate occasionally in a closed vessel and, after 12 hours, filter.

No. 1,252.—**Syrup of Lactophosphate of Calcium** (A. T. G.).

This correspondent says: "In your last number (p. 28) I read a very interesting article on Syrup of Lactophosphate of Calcium; but you fail to state in what particular the advantage of your method lies. Your formula makes the syrup cost about 80 cents per gallon more, and, though there is a saving in time in not having to wash the precipitate as in the pharmacopœial process, yet the result is as impure a product as if you took the commercial phosphate of lime and dissolved it directly in the lactic acid, in the U. S. P., process, instead of reprecipitating it."

Our correspondent is mistaken in the latter part of his letter, inasmuch as the product obtained by following the process given in our February number *cannot* be as impure as that obtained by starting from commercial phosphate of calcium. In the second place, our correspondent errs in calling that process *ours*, since it is devised by Mr. R. Rother, whose name ought to be known to him as that of a scientific pharmacist. The advantage of Mr. Rother's formula, or of our own (in which lactate of calcium is used) lies in the readiness with which the syrup can be prepared, while the officinal process requires a considerable time. This shortening of time and labor alone is equivalent to some money value, and our correspondent should not object to an increase in price of 80 cents *per gallon*, which would be only 10 cents per pint. We are sure that by following the formula he will save more than this excess for some other useful purpose.

No. 1,253.—**Oleomargarine** (L. G. Sh.).

Besides extensive articles which have appeared, from time to time, in scientific journals, reports of Health Boards, British Parliamentary papers, and some rather superficial chapters on the subject in a few chemical or analytical text books, the only work we know of which would likely cover the ground you want is the following:

Victor Lang. Die Fabrikation der Kunstbutter, Sparbutter, und Butterine. 8vo, Wien (Hartleben), 1878.

No. 1,254.—**Zamia Integrifolia as an Emulsifying Agent** (A. E. A.).

Referring to an article on advertising page 39 of our January number, relating to emulsions of petroleum as an insecticide, this correspondent wishes to know: (1) Where the root of the plant can be obtained. (2) How it may be used. (3) Who makes a machine for emulsifying on a large scale. (4) Can *Laminaria saccharata* (said to be found on Long Island) be used for this purpose? (5) Of whom can it be obtained?

(1) We know of no one who has the root for sale, but presume that Prof. C. V. Riley, of Washington, the author of the paper referred to, could inform you. Dr. J. C. Neal, of Archer, Fla., also referred to in the paper as having used this emulsion, should also know something about it. (2) The mode of using it appears to be pretty well described in the paper referred to, and we have no further information on the subject. (3) The "Sparrow Mixer" is recommended as a serviceable machine for making quantities of emulsions, but an ordinary churn would probably answer every purpose. (4) We are unable to give you any information respecting *Laminaria saccharata* either as regards its value as an emulsifier or the source whence it may be obtained.

No. 1,255.—**Emulsifying Mineral Oils** (A. E. A.).

To form emulsions with mineral oils, we know of no substance more efficacious than the article called "Polysolve," mentioned in our February number. This most remarkable compound, which is destined to play an important rôle in medicine, technology, and other arts, can dissolve a very large proportion of petroleum, and the solution thus produced may afterwards be diluted with water, whereby an emulsion is produced, from which the petroleum separates only very slowly. This diluted solution then may be used for sprinkling or squirting upon plants to kill injurious insects. We, for our part, should prefer the latter method to any other.

We have made various experiments with the polysolve, and the more we study it the more we have been surprised. It can be purchased at very moderate prices from Dr. A. Mueller-Jacobs, Mount Vernon, N. Y.

No. 1,256.—**Eureka Catarrh Remedy Specific** (J. E.).

Can any of our readers inform us of the nature of this remedy prepared by Dr. C. Hoyt, of Sharon, Pa.?

No. 1,257.—**Manufacturers of Chloral** (D.).

One of our subscribers desires the addresses of the manufacturers of chloral hydrate in this country. We will forward any answers directed to our care.

ANSWERS IN EXCHANGES.

Indiana Pharmacist.

Bismuth in Pills.—"Subnitrate of bismuth is best given in pills. As bismuth is almost insoluble, it is not well to give it in fluids."

[On the contrary, owing to the fact that it is most commonly used for its direct effect upon the mucous membrane, it is far preferable to give it suspended in some mixture of the same or a greater specific gravity, or in the form of a powder, to be poured on the tongue, and to be rinsed down with a swallow of water. Of all the forms for its administration, the pillular is probably the least desirable, except in so far as it facilitates its ingestion.]

BIBLIOGRAPHY.

THE EXTRA PHARMACOPŒIA OF UNOFFICINAL DRUGS AND CHEMICAL AND PHARMACEUTICAL PREPARATIONS. By WILLIAM MARTINDALE, F.C.S. With References to their Use abstracted from the Medical Journals, and a Therapeutic Index of Diseases and Symptoms. By W. WYNN WESTCOTT, M.B. Lond. Second Edition. London: H. K. Lewis, 136 Gower St., W. C.: 1884, pp. 330.

SEVENTEEN years having elapsed since the publication of the latest edition of the British Pharmacopœia, the need for supplementary works has become quite necessary and the extent to which this particular work meets the demand was shown by the sale of the entire first edition within a few weeks of its appearance. In form it is capable of being carried in the pocket, it has limp morocco covers lettered on the side, so as to adapt it for the office table and it contains, in a judiciously condensed form, a great deal of information from recent authorities concerning drugs and preparations which are officinal in Great Britain, Germany, and the United States, as well as many which are as yet unofficinal or to be found in special pharmacopœias, like those of some of the London hospitals.

Bearing in mind the relations between British weights and measures and our own, the work will be found valuable for reference for physicians, since it contains much information about new remedies which must otherwise be searched for in medical journals and pamphlets.

EPITOME OF SKIN DISEASES, with Formulæ, for Students and Practitioners. By the late TILBURY FOX, M.D., F.R.C.P., and T. COLCOTT FOX, B.A., M.B. Third American Edition. Revised and with Additions by T. COLCOTT FOX, B.A., etc. Philadelphia: Henry C. Lea's Son & Co.: 1883, pp. 240, 8vo. $1.25.

WE have already expressed our satisfaction with previous editions of this work. In the one now presented the publisher announces the insertion of the classification of dermal affections adopted by the American Dermatological Association, and the editor announces several changes in the text to bring the work up to present requirements.

RETAIL DRUGGISTS' DIARY AND WANT BOOK. Detroit: Frederick Stearns & Co., 1884.

THIS is somewhat in the style of the diary of the *Chemist and Druggist*, but better suited to the retail trade of this continent. According to the publisher's summary of its contents, it contains sixteen pages of important tables and information, scientific and political, fifty-two pages of diary, with space for each day of the year, and twelve pages of "want book" for needs, purchases, etc. The *true inwardness* of the book, however, lies in the ninety-four pages of priced catalogue, which is profusely illustrated and contains over fourteen thousand items of things that every well-regulated pharmacist should know about. A perusal of some of these pages will show how the "cut-rate" question may be settled in a way that will prove eminently satisfactory to every retail dealer.

INDEX TO THE TRANSACTIONS OF THE AMERICAN MEDICAL ASSOCIATION. Volumes I. to XXXIII. Prepared by WILLIAM B. ATKINSON, M.D., Permanent Secretary. Philadelphia: 1883, pp. 130, 8vo.

THE compiler remarks that, the Association having ceased to publish its annual transactions in a separate volume, it has been deemed a fitting opportunity to issue a general index of the thirty-three volumes which have been published since the foundation of the Association in 1849.

Examination of the contents shows many errors which are to be traced to a faulty system. It is evidently the work of one who has not the experience desirable in such an undertaking. To illustrate, we quote the following:

"Literature of children's diseases, xxxii., 351."

"Diseases of children, works on, i., 282."

"Children, disease of, works on, i., 282; xviii., 393; xxxii., 351."

"Change in constitution, as to representation by schools and hospitals, xxvi., 72."

"Criminal abortion," has thirteen references, while

"Abortion, criminal," has but five.

"Danish authors on cancer operations, vi., 274," has no corresponding cross-reference under "cancer" or "operations."

And so on through the book, one finds numerous instances of that kind of indexing which is said to have occurred in a volume of law reports in which, under the title "Great Mind," reference was made to an opinion by a learned judge, who remarked, on the basis of certain evidence submitted, that he had a *great mind* to decide—so and so.

YEAR BOOK OF PHARMACY. Comprising Abstracts of Papers Relating to Pharmacy, Materia Medica, and Chemistry. Contributed to British and Foreign Journals from July 1st, 1882, to June 30th, 1883, with the Transactions of the British Pharmaceutical Conference at the Twentieth Annual Meeting Held at Southport, September, 1883. London: J. and A. Churchill, 1883, pp. 614, 8vo.

THIS is always a welcome volume. Not only does it contain the series of valuable papers and discussions of the the conference, but the abstracts are carefully made, and comprise most of the valuable papers which have appeared in pharmaceutical periodicals. The volume should be in all reference libraries intended for pharmaceutical students and practitioners.

A MANUAL OF PRACTICAL HYGIENE. By EDMUND A. PARKES, M.D., F.R.S. Edited by F. S. B. FRANÇOIS CHAUMONT, M.D., F.R.S. Sixth Edition, with an Appendix Giving the American Practice in Matters Relating to Hygiene. Prepared by and under the supervision of Frederick N. Owen. Vol. II. New York: William Wood & Co., 1883, pp. 556, 8vo.

THIS is the November number of the series for 1883 of Wood's Library of Standard Medical Authors. In its original shape it is already so well known and highly appreciated as to require no criticism. The American additions consist of an introductory chapter followed by others on Water, The Character and Distribution of American Soils, Climatology and Meteorology, Ventilation and Warming, Removal of House Waste, Food Adulteration, Disinfection and Deodorization, Vital Statistics, and Hints to Sanitary Inspectors, the whole comprising over one hundred and sixty pages of the volume.

THE FIELD OF DISEASE, A BOOK OF PREVENTIVE MEDICINE. By BENJAMIN WARD RICHARDSON, M.D., LL.D., F.R.S., etc. Philadelphia: Henry C. Lea's Son & Co., 1884; pp. 737. 8vo.

ALTHOUGH intended, primarily, for non-professional readers, this work contains so many matters of interest and importance to medical men which are not to be found in any single work that the publishers have wisely issued it in a form which especially adapts it for professional readers, as well as the public.

Although much of the matter contained in the volume is too brief in its scope to answer the needs of a physician, the work might be carefully studied with much profit not only by medical students in the early period of their studies, and before entering upon the study of advanced topics, but many physicians, as well, would gain from it a comprehensive view of the nature of disease and its prevention, which would prove of great service to them in practice. In the portion relating to acquired diseases from inorganic and organic poisons especially, will be found many things of interest to the pharmacist, as, for example, those caused by arsenic, cadmium, lead, mercury, bichromate and cyanide of potassium, salts of silver, zinc, chloride of sodium, copper, ammonia gas, carbon bisulphide, carbonic oxide, chlorine, smoke fumes of copper, and hydrochloric and nitric acid, phosphorus, resin, sulphurous acid gas, sulphuretted hydrogen, absinthe, alcohol, cannabis indica, chloral, cloroform, ether, nitrous oxide, opium, tobacco, tea, coffee, cocculus indicus, aniline, nitro-benzol, paraffin, soot, turpentine, and mixed vapors and gases.

THE PHYSICIAN'S POCKET DAY-BOOK. Designed by C. HENRI LEONARD, M.A., M.D. Detroit, Mich. $1.00.

THERE are several features of this pocket day-book that are peculiar to it and render it better adapted for use as an account book than any other form of pocket book with which we are acquainted. Used in connection with the physician's ledger furnished by the same author, it reduces the labor and details of medical book-keeping to the smallest possible degree consistent with accurate accounts.

FARMAKOGNOZYIA. Podrecznik dla lekarzy-powiatowych, aptékarzy i sluchaczy, nauk farmaceutynczynych, etc. ze DR. MIECZYSLAW DUNIN WASOWICZ.

[Pharmacognosy. By Dr. W. Dunin Wasowicz.—In Polish.]

THE first two numbers of this new work on pharmacognosy which have reached us contain, 1, the drugs derived from the animal kingdom; 2, those derived from cryptogamic plants; 3, a portion of the phænogamic drugs, beginning with the seeds.

The descriptions are full and exact; the chapters on chemical constitution and on the history of each drug have been drawn up with the aid of the best and most recent literature and altogether the work promises to be a very meritorious one.

QUELQUES NOUVEAUX ESSAIS DES BEURRES FONDUS. Par le Dr. Joseph Zanni, Membre du Conseil Médical Civil de Constantinople. 8vo, pp. 21. Constantinople, 1883.

THIS pamphlet gives the results of of the author's examination of so-called "Siberian" melted butter supplied to the Ottoman army. He finds it adulterated with mutton tallow, and vegetable (probably cotton and sunflower) oils, and rancid from the presence of butyric acid.

A TREATISE ON PHARMACY, etc., etc. By EDWARD PARRISH. Fifth Edition, enlarged and thoroughly revised by Thomas S. Wiegand. With 256 illustrations. 8vo. Philadelphia: H. C. Lea's Son & Co., 1884.

IN the case of the present work, it is altogether superfluous to quote the long title. Every reader of this journal knows it by the short name: "Parrish's Pharmacy," and will be glad to learn that a new edition is now available, based on the new U. S. Pharmacopœia, and thoroughly revised. We have found this edition a great improvement on the last, inasmuch as we find it free from numerous errors which had crept into the former. It should be in the hands of every student and practical pharmacist.

AN ANSWER TO "A PROTEST AGAINST THE USE OF THE METRIC SYSTEM IN PRESCRIBING." By D. Webster Prentiss, M.D., Washington, D. C. (Reprint from The Medical News, Nov. 24th, 1883.)

DER FORENSISCH-CHEMISCHE NACHWEIS DES PIKROTOXINS IN THIERISCHEN FLUESSIGKEITEN UND GEWEBEN. (Inaug.-Dissert). ALEXANDER CHLOPINSKY. 8vo, Dorpat, 1883. (From Prof. Dragendorff.)

ERNEUERTE UNTERSUCHUNGEN UEBER ZUSAMMENSETZUNG UND SPALTUNGSPRODUCTE DES ERICOLINS. DIE LEDITANNSÆURE DIE GALLUTANNSÆURE UND DAS PINIPIKRIN. (Inaug.-Dissert.) RICHARD THAL. 8vo, Dorpat 1883. (From Prof. Dragendorff.)

UEBER VANADINSCHWEFELSÆURE, ein neues Reagens auf Alkaloide. Von Mag. Pharm. K. F. MANDELIN. 8vo. St. Petersburg, 1883. (From the author.)

RECENT STUDIES ON THE CONSTITUTION OF THE ALKALOIDS. By SAMUEL P. SADTLER, Ph.D., Introductory Lecture, Course 1883-84, Phila. Coll. Pharm. 8vo, Phila., 1883. (Reprinted from *Am. Journ. Pharm.*)

PROCEEDINGS of the Fourth Annual Meeting of the Illinois Pharmaceutical Association held at Springfield, Ill., Oct. 9th-10th, 1883.

MISSIONARY WORK AND ITS EFFECTS UPON THE WORKER. By WALLACE TAYLOR, M.D. (of Osaka, Japan), 8vo, pp. 18. Yokohama.

THE VEGETABLE MATERIA MEDICA OF WESTERN INDIA. By W. DYMOCK. Parts III and IV. (See NEW REM. 1883, p. 318).

PART V. is soon expected to appear. We shall not postpone any further comments on this valuable work until that time.

NEW PATENTS.

[Complete specifications and illustrations may be obtained of any one or more of the following patents by sending the number, title, name of patentee, with twenty-five cents for each copy, to the Commissioner of Patents, at Washington, D. C., together with the name and address of the person requesting the same.]

290,749. *Carbonating Apparatus.*—William J. Cunningham, Philadelphia, Pa.

290,784. *Bleaching Oil.*—Henry McManus, Brooklyn, N. Y. Assignor to himself, Robert McManus, and William W. Eastman, same place.

290,823. *Faucet for Soda Fountains and Other Articles.*—S. M. Way, Hempstead, N. Y.

291,163. *Manufacture of Ferro-Cyanides.*—Georges de Vigne, Lille, France.

291,196. *Inhaler.*—William A. Johnston, Clifton, and Arthur W. Browne, Pleasant Plains, N. Y., assignors to the S. S. White Dental Manufacturing Co., Philadelphia, Pa.

291,364. *Syringe.*—Philip B. Laskey, Marblehead, Mass.

291,388.

291,388. *Cupping-Glass.* — Charles L. Myers, New Hamburg, N. Y. *Claim*, the combination with the cupping-glass of the pivotal taper-holder, adjustable to the varied positions in the application of the glass.

291,637. *Glass Bottle-Stopper.*—John Story, Castle Shannon, Pa. The combination of a bottle having the inner

291,637.

edge of the upper end of the neck cut away so as to form a cavity, *i*, in combination with the stopper having a flange which projects outward over the neck of the bottle, and which stopper is provided with a cavity, *a*, and the conduits, *b*, which communicate with the cavity *i*, which is formed by the cut-away edge of the bottle.

291,638.

291,638. *Bottle and Stopper.*—John Story, Castle Shannon, Pa. The combination of a bottle having the lip of its neck inclined and flared upwardly and outwardly, with the stopper provided with the grooved flange, the shape of the groove being made to correspond to the shape of the lip and the different parts of the neck, and the stopper being ground so as to form a tight joint.

291,690. *Syringe.*—Joseph H. Clarke, Springfield, Ohio.

291,714. *Medical Compound.*—Daniel A. Green, Scott, N. Y. Consisting of mutton-tallow, honey, pine-pitch, beeswax, linseed oil, saltpetre, borax, alum, salt, hen's oil, skunk oil, Castile soap, laudanum, spirits of turpentine, oil of origanum, ether, and oil of sassafras.

291,751. *Medical Compound.*—Nettie A. Lauer, Carneiro, Kans. Consisting of alcohol, oil of peppermint, oil of sassafras, oil of spearmint, oil of origanum, oil of hemlock, oil of turpentine, oil of capsicum, and gum camphor.

291,821. *Process of Concentrating Sulphuric Acid.*—Moses A. Wald, Camden, N. J.

291,833. *Still.*—Peter N. Bardo, Newport, Ky., assignor to the Bourbon Copper and Brass Works, Cincinnati, Ohio.

291,920. *Stopper Lock for Bottles.*—James D. Mattison, New York, N. Y.

291,922. *Process of Preparing Medicated Court Plaster.*—Charles L. Morey, Comac, N. Y. Consists of removing from old gold-beaters' skins, by rubbing, all particles of gold adhering thereto, then beating the skins between paper, then subjecting the skins to pressure between sheets of paper moistened with a medicinal preparation to coat the skins on both sides, then drying, and finally flattening the same by pressure.

291,590. *Veterinary Medicine-Spoon.*—Jacques R. Stettheimer and Theodore Leis, Rochester, N. Y.

292,054. *Apparatus for Making Sulphuric Acid.*—John Samuel Rigby Beaufort, assignor of one-half to Fred. Brotherhood, Charleston, S. C.

292,085. *Bellows Attachment for Insect Powder, etc.*—Thomas Woodason, Chicago, Ill.

10,437 (*Reissue*). *Machine for Cutting off Gelatin Capsules.*—Frederick A. Hubel, Detroit, Mich.

292,255. *Salve.*—William Richardson, Buffalo, Mo. In a salve for the cure of piles, a compound formed of ooze of mullein leaves, 4 oz.; hog's lard, 4 oz.; gum camphor, ½ oz., and laudanum, 80 drops.

292,260. *Utilizing Waste Calcium Chloride and Sulphate.*—Conrad Semper, Philadelphia, Pa. The method of utilizing waste sulphate of calcium produced in the manufacture of acetic acid from acetate of lime, which consists in subjecting said product to a high temperature, as and for the purpose described.

293,381. *Syringe.* — George Abner Stiles, West Gardner, assignor to Warren Hill, Boston, Mass. An attachment for syringes, consisting of a skeleton frame for distending the vagina, provided with a suitable seat for the nozzle of the syringe, and a spring for clamping it thereto.

292,434. *Capsule Machine.*—Frederick A. Hubel, Detroit, Mich.

292,449. *Bottle-Stopper.* — Stephen P. M. Tasker, Philadelphia, Pa., assignor to Joseph R. Tasker, same place.

ASSOCIATION AND COLLEGE NOTES.

New York. — The druggists of Broome Co. organized a County Pharmaceutical Association at Binghamton, on the 7th of February, with the following officers: *President*, C. Z. Otis; *Vice-President*, J. E. Brown; *Secretary*, W. M. Quirk; *Treasurer*, H. A. Smith; *Executive Committee*, J. Schnell, J. McDougall, E. Ostrum, N. Waldron, and F. Corbin.

At the annual meeting of the Kings County Pharmaceutical Society, held in Brooklyn on the 12th of February, the retiring President, Mr. Black, read a brief address, and various reports were presented.

The Secretary reported a gain of two and a loss of seven members during the year, leaving a membership of one hundred and fifty. Mr. W. P. De Forest had been elected to fill a vacancy in the Board of Pharmacy.

The Treasurer reported the receipt of $392.60 and an expenditure of $325.33 during the year, leaving a balance of $1,114.46 in the treasury.

The Committee on Canvassing for an Equalization of Prices reported that more than four-fifths of the druggists had signed the agreement.

The Trustees recommended, in view of a recent notice published by the manufacturers of vaseline, that the Society defend any suit brought against a member by these manufacturers or their representatives, to establish a test-case. The Trustees also recommended the appointment of a committee to confer with the authorities of the Long Island Hospital with a view to the organization of a College Pharmacy.

The Committee on Trade Interests, of which Mr. E. A. Sayre was chairman, reported at length, and chiefly in relation to the formation of a National Retail Druggists' Association and the evils of underselling.

The Committee on Legislation (W. P. De Forest, Chairman) reported favorably upon the prospect of the enactment of a State Pharmacy Law by the present Legislature. The bill offered last year failed to secure the Governor's approval owing to an omission. This year a clause had been introduced in the Committee on Public Health which would allow assistants to open stores on their own account. This had grown out of a misunderstanding in the legislative committee, but an explanation by the Committee of the Society had led to a promise that the additional clause would be withdrawn. The Committee advised an increase of the registration fee to $5.00 for all who apply for registration without examination.

The effect of the Penal Code, lately in force, upon the local pharmacy law was declared to be *nil*, and the opinion of counsel was submitted. The atten-

tion of the Society was directed to the desirability of repealing the revenue license so far as it relates to the sale of liquors in drug stores, and also to the need for a reduction of the present tax on alcohol.

The following officers and committees were chosen for the ensuing year: *President*, G. M. Baker; *Vice-Presidents*, L. D. Sheets (re-elected); L. T. Stevens; *Secretary* and *Treasurer*, C. R. Paddock (re-elected); *Assistant Secretary*, F. N. Bliss; *Censors*, Messrs. Black, P. Guignon, C. E. Day; *Trustees*, L. P. Perkins, L. E. Nicot, W. P. De Forest, W. M. Davis, L. E. Sayre. Fourteen delegates were appointed to attend the initial meeting of the New York Druggists' Union.

In compliance with a notice sent to the retail druggists of this city, a meeting was held in the College of Pharmacy on Thursday, February 14th, at 2.30 P.M., about two hundred and fifty pharmacists being present. The following constitution was adopted unanimously.

The object of this organization is to fraternally unite the pharmacists and druggists of the city for the protection and promotion of their mutual interests.

I. This organization shall be entitled "The New York Druggists' Union," and shall consist of honorary and active members.

II. 1. Any pharmacist or druggist, chemist or manufacturer, connected with the legitimate drug trade may become a member on receiving a two-thirds vote of those present, and by signing the Constitution and Articles of Agreement.

2. Application for membership must be made in writing at the meeting immediately preceding that at which the applicant is voted for.

3. Each member shall pay an annual due of one dollar, and the annual dues of this Union shall be fixed at one dollar.

4. Pharmacists, chemists, or other scientific men who distinguish themselves in the interests of our profession or Society, or who may be nominated by the Executive Committee, may be elected honorary members. They are not required to contribute to the funds, vote at any meeting, nor shall they be eligible to office.

5. Voting for members shall be by ballot, except in the case of honorary members, who may be elected *viva voce*.

III. 1. The officers of this Union shall consist of a President, three Vice-Presidents, a Secretary, a Treasurer, and an Executive Committee. The last shall consist of eleven members, who shall be elected annually, by ballot, at the regular annual meeting, a majority, only, of the members present being necessary to elect.

2. The President shall preside at all meetings, and shall call special meetings upon the written request of ten members.

3. The Vice-President shall assist the President, or preside in his absence, in the order of his election.

4. The Secretary shall keep a record of all meetings, attend to all correspondence, read all communications, and preserve all letters, papers, and documents.

5. The Treasurer shall receive all funds and disburse them under the direction of the President, keep a faithful account of the same and make a full report at the annual meeting.

6. The Executive Committee shall meet once in three months, or oftener if desirable, upon the call of the Chairman. It shall have charge of applications for membership, and the publication of such matters as the Union directs. It shall also have power to initiate such measures and grant such privileges to members as may appear necessary or desirable, from time to time, in order to protect ligitimate pharmacy against the encroachments of those who seek to overthrow it, and to transact all business not otherwise assigned. The Executive Committee shall also report all resolutions and decisions agreed to by them, to the President, who shall countersign such papers and transfer them to the Secretary for final action of the Union.

7. All officers shall serve until their successors are elected and installed.

IV. 1. At each annual meeting the President shall appoint the following Standing Committees, of each of which he shall be, *ex officio*, a member.

1. Committee of Trade Interests.
2. Committee of Legislation.
3. Committee of Pharmaceutical and Scientific Interests.
4. Committee of Arbitration.

2. The duty of the Committee of Trade Interests shall be: First, To prepare a uniform price-list of all proprietary articles to be submitted to the Union for adoption. Second, To assist manufacturers, proprietors, and wholesale druggists to arrest any existing demoralized condition of the drug-trade, and to consider all propositions and measures designed to suppress any ruinous opposition and cutting of profits, and also the selling and handling of medicines by tradesmen, and to give attention to such additional matters as may, in their judgment, be within their proper province, and report their action to the Union when called upon.

3. It shall be the duty of the Committee of Legislation to communicate with the N. Y. State Pharmaceutical Association, and others, as may be deemed best; to promote the enactment of a State pharmacy law, for the purpose of regulating the sale of drugs, poisons, and medicinal preparations, and confining the handling and sale of such articles exclusively to pharmacists and druggists.

4. The Committee of Pharmaceutical and Scientific Interests shall offer such suggestions as may tend to enlighten, instruct, and advance the interests of the profession.

5. It shall be the duty of the Committee of Arbitration to hear and act upon all complaints against any member of the Union; the accused to have the right to select two members of the Union to act with the Committee, which shall give both sides a fair hearing and decide the case upon its merits. An appeal from the decision of the Committee may, however, be taken to the Union at its next meeting, when a majority-vote of those present shall finally decide the case.

V. 1. Special Committees may be appointed by the President as occasion may require, but such Committees shall be limited by the scope of the resolutions under which they act.

VI. 1. Twenty-five members shall constitute a quorum.

VII. 1. The regular meetings of the New York Druggists' Union shall be held on the second Tuesday of each month at two and a half o'clock P.M.; the annual meeting at the same hour on the second Tuesday of February.

VIII. 1. ORDER OF BUSINESS.

1. Roll-call of officers and members.
2. Reading of minutes of previous meeting.
3. Reports of committees.
4. Reading of communications.
5. Admission of members.
6. Debate and action on all matters in consecutive order as presented by the Committees.
7. Unfinished business.
8. New and miscellaneous business.
9. Adjournment.

2. Cushing's Manual shall be the authority of the Union on parliamentary law.

IX. 1. If any changes or revision of the Constitution and Rules are deemed necessary, a special meeting shall be called, so that every point may be carefully weighed and debated, and no change shall be made, except by a vote of two-thirds of those present at the meeting so called.

The following Articles of Agreement were likewise adopted:

We, the undersigned pharmacists and druggists of New York, hereby agree and bind ourselves to abide by the Constitution, Rules and Resolutions of the New York Druggists' Union, as adopted at its first meeting, February 14th, 1884, and to adhere in good faith to the scale of prices on proprietary medicines and preparations which shall be adopted by said Union; and to insist that the business of selling such articles to the consumer belongs to pharmacists and druggists, and to them only.

We also agree and bind ourselves not to buy goods from any house which sells to a dealer who violates the aforesaid scale of prices. Neither will we buy from any house or firm, local or foreign, which, after having been notified, continues to sell to such dealer or dealers.

We further agree that we will not purchase goods of any wholesale druggist, dealer, or manufacturer, who supplies any dealer who is known to be underselling Union rates, or who supplies unrecognized druggists or tradespeople.

We further agree not to buy any article manufactured by parties who violate the afore-mentioned scale of rates, or any article or articles in the sale of which they are known to be interested; and, further, that we will do all in our power to discourage and prevent the sale of such articles.

We, the undersigned, also agree that we will not sell any merchant, pharmacist, or druggist any articles of which he is known to be cutting the prices.

It is further agreed, that, in case any of the signers of these Articles of Agreement shall violate the scale of prices adopted by the New York Druggists' Union, either directly or indirectly, such person shall, upon conviction, forfeit the sum of twenty-five dollars ($25), payable to the treasurer of the Union.

The following officers and committees were chosen: *President*, A. J. Ditman; *Vice-Presidents*, Paul Balluff, Ewen McIntyre, Rowland N. Hazzard; *Secretary*, George Inness; *Treasurer*, Gustav Balser; *Executive Committee*, Adolph Tscheppe, M. B. Cox, S. J. Bendiner, C. F. Jewett, J. S. Scofield, H. A. Cassebeer, H. Diedel, H. W. Atwood, J. M. Fisher, D. W. Seward, T. A. Speer; *Com. of Trade Interests*, J. N. Hegeman, E. Molwitz, B. W. Dyer, C. Kessler, J. Condie, B. Fairchild, J. Imgard, O. Kress, T. J. Macmahan, W. Massey; *Com. of Legislation*, J. N. Hegeman, G. Inness, E. L. Milhau, T. J. Macmahan, H. W. Atwood; *Com. of Pharmac. and Scient. Interests*, J. A. Caswell, S. J. Bendiner, T. H. Sayre, E. McIntyre, A. Tscheppe; *Com. of Arbitration*, E. L. Milhan, H. N. Fraser, F. Ehrmann, T. Eberling, M. Marguette, H. O'Neil, H. L. Metz, M. J. Breidenbach, J. King, Jr., D. Hays, C. E. Vetter, S. Nauheim, T. Starr, H. Schnied.

Addresses were made by Messrs. Baker, of the Kings County Pharmaceutical Society, Gellatly, Seabury, Royce, Breidenbach, King, and several others, and the objects of the Union and the methods to be pursued were discussed at considerable length. Letters were read from Mr. E. L. Schellentrager, the President of the Cleveland Pharmaceutical Association (which has had a local protective organization for four years), Mr. Henry Canning, of Boston, the President of the N. R. D. Association, and Mr. Edward A. Sayre, of Brooklyn, Chairman of the Executive Committee of the N. R. D. Association, and the meeting was

adjourned to meet at 2:30 P.M., on February 21st, at the College of Pharmacy.

At a meeting, held on the 21st of February, no business of importance was transacted, the time being chiefly occupied by remarks by Messrs. Robbins, Gellatly, Seabury, and others. The following was adopted:

Resolved, That we extend to Brooklyn, Philadelphia, Boston, and all other cities oppressed by underselling goods, firm and active co-operation, and to strengthen them in all matters that will tend to elevate and protect pharmacy, professionally and commercially.

About 150 additional names were added to the article of agreement, and the 28th of February, at 2.30 P.M., was decided upon for the next meeting.

Pennsylvania.—The Philadelphia College of Pharmacy has "*Resolved*, That the College requests the Board of Trustees, through its Committee on Instruction, to prepare and send to all the active members of the College a set of queries as to the desirableness of a preliminary examination on the part of students desiring to enter the College; as to what this preliminary examination should cover, and as to how it should be conducted, and on other matters connected with this subject."

Iowa.—An attempt on the part of a few persons is being made to secure a repeal of the pharmacy law of the State, to combat which the State Pharmaceutical Association has memorialized the members of the Legislature, showing the importance of the relation between the public and the profession of pharmacy and the benefit which has already followed the enactment of the law. The address, moreover, denies the charge that the Commission of Pharmacy, now existing, has failed to act for the best interest of the community.

Ohio.—The bill before the legislature to enact a State Pharmacy law appears so meet with general favor among both legislators and the public. The initial registration fee has been reduced from five to three dollars and a number of minor alterations have been made which tend to improve the construction of the instrument.

In a recent meeting of the Cincinnati College of Pharmacy the relations of graduates of the college to the proposed bill were discussed with much animation, some of the speakers thinking that the failure to exempt graduates of the school from examination for a license would be an injustice to them. Nevertheless the bill as it stands was formally approved, when two of the minority tendered their resignations a members of the College.

District of Columbia.—An association named "The Chemical Society of Washington" has lately been organized with Prof. Antisell as its President.

Connecticut.—The State Pharmaceutical Association was in session in New Haven on the 5th and 6th of February, over one hundred members and a large number of visitors being present. The following matters were referred to in the various reports and addresses:

The membership is 234, 4 being honorary.

During the preceding year, S. Noyes, of New Haven; J. Hodgson, of Rockville; and S. R. McNary, of Hartford, have died.

The pharmacy law recently enacted is working satisfactorily, and the Committee on Legislation have secured such action respecting the sale of alcoholic liquors that pharmacists will not require a liquor dealer's license.

There is a cash balance in the treasury of over $800.

The Committee on Queries experience some trouble in obtaining the co-operation of members in providing papers for presentation at the meetings, and it is suggested that members should hereafter accept one or more subjects from a list prepared by the committee, and relating to pharmacopœial and other preparations, and offer practical suggestions concerning them.

The Committee on Progress of Pharmacy remarked the increase of attention to pharmacopœial preparations and efforts to improve them.

The following resolution, after considerable discussion, failed of adoption: "*Resolved*, That the adoption of the metric system would be detrimental to our best interests as pharmacists and business men."

The President, Mr. E. S. Sykes, of Hartford, in the course of his very suggestive and able address, referred to the successful operation of the pharmacy laws and the labors of the various committees.

Respecting trade interests, he said: . . . "The pharmacist, while he is a professional man when employed as a chemist, or when consulted concerning the properties of medicines, has also a merchant's side, and must have a merchant's training—must be acquainted with prices, methods of buying and selling, and how to keep within the unwritten laws and amenities of trade yet be sufficiently enterprising." He also advised the appointment of a committee to prepare working formulas for non-officinal preparations, and an effort to secure a conference of delegates from the State Medical and State Pharmaceutical associations respecting matters of mutual interest.

In future, the published transactions will be more condensed.

The Treasurer will be allowed to draw upon the funds of the Association for current expenses to an amount not exceeding $150.

The next annual meeting will be at Hartford, date not determined.

The summer meeting is to be on the 10th of July.

The following are the officers and committees for the ensuing year: *President*, W. R. Francis, New Haven; *Vice-Presidents*, J. C. Nichols, New London; E. W. Thompson, New Britain; *Secretary*, F. Wilcox, Waterbury (re-elected); *Treasurer*, G. P. Chandler, Hartford. COMMITTEES:—*Executive*, N. D. Sevin, W. W. Mosher, C. W. Whittlesey, L. H. Goodwin, R. Wells, F. Wilcox; *Pharmacy and Queries*, C. A. Rapalye, W. A. Spalding, F. Rogers, C. B. Botsford, R. F. Woodruff; *Legislation*, L. I. Munson, E. A. Gessner, S. Goodrich, E. S. Sykes; *Trade Interests* D. Phelps, C. E. Shelton, F. S. Stevens, T. F. Main. DELEGATES:—Amer. Pharm. Assoc., N. R. D. A., and N. Y. State, J. Olmstead, N. D. Sevin, D. Phelps, G. B. Hanover; Mass., H. L. Parker, J. C. Nichols, C. A. Rapalye; New Jersey, C. W. Whittlesey, W. W. Mosher, T. F. Main.

The supper given by the New Haven pharmacists was laid for one hundred and fifty persons, the *menu* being printed on slippery elm bark (not bad for a pharmaceutical effort in the "Elm City.") The account of the exhibition will be found among our TRADE NOTES.

ITEMS.

Iodoform is being adulterated with picric acid, according to Jules Libert, a pharmacist of Liége, Belgium.—*Pharm. Jour.*

Sulphate of Cinchonidine, according to Messrs. Gehe, is being purchased in Germany as extensively as the supply will admit, for shipment to the United States.—*Pharm. Jour.*

Analysis of Patent Medicines.—An item is going the rounds to the effect that a bill has been introduced in Congress, providing that the manufacturers of proprietary medicines shall submit their formulas and samples of their wares for analysis to the Patent Office before patents are issued. If these medicines are found to be mostly cheap whiskey, they will be refused a patent. [This is probably a mistake, since we are not aware of a patented medicine of which the formula is not stated in the letters patent.—ED. AM. DRUG.]

An organization of druggists' clerks is said to be in progress in New York.

Ginseng root is said to have its weight fraudulently increased by replacing its pith with molten lead.

Mr. Carl Jensen, of Philadelphia, has instituted suits to recover damages from manufacturers infringing his patent process for manufacturing "Crystal Pepsin."

The Chesebrough Manufacturing Company have given notice that they will prosecute persons who put up petrolates in packages labeled "Vaseline," or who rebottle vaseline, and relabel it over their own name.

PHARMACEUTICAL CALENDAR.—MARCH.

Additions to and Corrections of the following Calendar are solicited.

Date.	Society Meetings.	Date.	Society Meetings.
Mon. 3d.	Erie Co. (N. Y.) Pharm. Assoc.—Buffalo.	Wed. 12th.	New York Board of Pharm.
	Massachusetts Coll. of Pharm.—Boston.	Thurs. 13th.	Newark (N. J.) Pharm. Assoc.—Annual M.
Tues. 4th.	Maryland Coll. Pharm.—Baltimore.		Philadelphia (Pa.) Coll. of Pharm.
	St. Joseph (Mo.) Pharm. Assoc.		Maryland Coll. of Pharm.—Baltimore.
	Kings Co. (N. Y.) Pharm. Soc.—Brooklyn.—		N. Y. German Apoth. Soc.
Thurs. 6th.	Louisville (Ky.) Coll. of Pharm.		Lancaster Co. (Pa.) Pharm. Assoc.
Fri. 7th.	Cleveland (Ohio) Pharm. Assoc.	Tues. 18th.	St. Louis (Mo.) Coll. of Pharm.—Alumni As.
	American Chemical Soc.—New York.		Philadelphia (Pa.) Coll. of Pharm.
Mon. 10th.	Louisville (Ky.) Coll. of Pharm.—Annnal M.		St. Joseph (Mo.) Coll. of Pharm.
Tues. 11th.	St. Louis (Mo.) Coll. of Pharm.	Thurs. 20th.	New York Coll. of Pharm.—Annual Meeting.
	Massachusetts Coll. of Pharm.—Boston.	Mon. 24th.	Philadelphia (Pa.) Coll. of Pharm.—Annual M.
	National Coll. of Pharm.—Washington.	Tues. 25th.	Boston (Mass.) Druggists' Assoc.
	New York Druggist's Union, 2.30 P.M.	Thurs. 27th.	Kings Co. (N. Y.) Board of Pharmacy.—B'klyn.
Wed. 12th.	Cincinnati (Ohio) Coll. of Pharm.		